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A Clinical Lecture

ON

METHODS OF CATARACT EXTRACTION:

A CRITICAL REVIEW OF THE METHODS AT PRESENT ADVOCATED.

Delivered at the Royal London (Moorfields) Ophthalmic Hospital on May 26th, 1909,

BY J. HERBERT PARSONS, D.Sc. LOND., F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE HOSPITAL; ASSISTANT OPHTHALMIC SURGEON, UNIVERSITY COLLEGE HOSPITAL, LONDON.

GENTLEMEN,—Extraction of cataract, as a substitute for the prevalent method of "couching" or depressing the cataract into the vitreous, was first suggested by Steven Blankaart in 1688. It was first actually employed upon the human subject in Paris by Saint Yves in 1707 and by Petit in 1708, in both cases for lenses dislocated into the anterior chamber. The use of the method as the operation of election for the treatment of senile cataract was undoubtedly introduced by Jacques Daviel in 1748 and brought prominently into notice in a communication to the French Academy of Sciences in 1752. In his earliest operations Daviel made a section involving the lower two-thirds of the corneal circumference. He soon found that this section was unnecessarily large and limited his incision to half the circumference. The section was made with a lance-shaped knife and extended by curved scissors; it lay in the apparent corneo-scleral margin. The cornea was turned upwards with a spatula and the lens capsule opened with a small lance-shaped needle. The lens was expressed by pressure with the finger applied to the lower lid. Fortunately for humanity, Daviel must have possessed considerable manual dexterity. It is owing to his enthusiasm and perseverance that the operation survived the onslaughts of less capable surgeons.

It is well known to you all that innumerable modifications of the operation have been devised and put into practice at various times. Some have passed into the limbo of oblivion or survive only in historical treatises. Many others persist and are still advocated by ophthalmic surgeons to-day. Their survival is only to be explained on the grounds that each has some merit of its own, and my object in this lecture is to discuss the advantages and disadvantages of the different procedures now advocated. In so wide a field it is necessary to set some boundaries, and I shall confine my inquiry to extraction with iridectomy ("combined" extraction), extraction without iridectomy ("simple" extraction), and extraction in the capsule. I may remark at the outset that the order in which I have enumerated the operations is, in my opinion, that of diminishing order of applicability to the ordinary cases of senile cataract.

One step is common to all the methods—viz., the formation of a section or incision. By well-nigh universal consent this is now made upwards, in or close to the apparent corneo-scleral margin. All are agreed that it should not exceed half the circumference of the cornea, that only in exceptional circumstances is so large a section necessary, but that too large a section is a trivial fault compared with one too small. A purely corneal section has been abandoned by most surgeons, and a peripheral scleral section is contraindicated owing to increased risks of prolapse of the iris; it is now customary to place the incision just sufficiently peripheral to ensure the formation of a conjunctival flap. This may be insignificant at the sides but increases gradually in width as the vertical meridian of the eye is reached. So uniform is the consensus of opinion upon the formation of the section and conjunctival flap that it would not repay us to spend time now on the consideration of details of relatively slight importance.

Iridectomy in some form or other is common to the combined operation and to extraction in the capsule as prominently advocated at the present day by Major Henry Smith, I.M.S., of Jullundur. The object of iridectomy is to ensure a free passage of aqueous from the posterior chamber to the anterior chamber, thus reducing the manifold dangers of prolapse of the iris to a minimum. For this purpose it is not essential that the aperture in the iris should be large. Too large a coloboma is unsightly, weakens or abolishes the action of the sphincter iridis, and reduces the efficacy of the pupil as an optical diaphragm. A narrow coloboma is made by withdrawing the iris with iris forceps and cutting it with de Wecker's scissors held so that the blades lie parallel to the vertical meridian of the cornea. By this method there is more danger of cutting off part of the conjunctival flap than when the blades of the scissors are held parallel to the wound, but the latter causes a broader coloboma. The danger of incising the flap is slight if certain details are borne in mind. It is not essential that the coloboma should be peripheral. It is therefore not necessary to draw the iris very far out of the wound nor to remove more than a small portion. It is, indeed, disadvantageous to exert much traction on the iris; however well the eye may be cocainised the iris remains sensitive, and whilst the pain of the grip of the forceps is slight and easily borne it is much increased and may lead to loss of the patient's control if the iris is stretched unduly. The dangers of prolapse of the iris are by no means abolished by iridectomy and the dangers of incarceration in the wound are increased. Every care must therefore be taken to replace the iris. This can be best ensured, not by waiting until the later stage after the lens has been extracted, but by adopting the device employed by Alfred Graefe, Knapp, Horner, Snellen, and others, of reposing the iris and the pillars of the coloboma immediately after performing the iridectomy. Owing to the support given by the lens and the smoothness of the capsule the manœuvre is easy at the early stage. On the other hand, if there is already some incarceration it will be made worse during the passage of the lens, and reposition may be extremely difficult. Of course, reposition must be ensured at the later stage also.

Various modifications of iridectomy have been advocated to effect the main purpose in view—viz., free communication between the posterior and anterior chambers. Thus various degrees of iridotomy have been advocated. Some, for example de Wecker, have recommended that the iridectomy should always be postponed until the lens has been removed. This is not infrequently necessary in cases in which the surgeon has commenced with the intention of performing a simple extraction and has found that reposition of the iris is so unsatisfactory that immediate iridectomy is indicated. As a general precept in combined extraction it cannot be advocated. There is, however, a modification of iridectomy which has many points in its favour and which should be effected at this stage. It consists in making a small button-hole in the periphery of the iris. The method was introduced by Bell Taylor, and has received the support of Schweigger, Pflüger, Kuhnt, Hess, and other prominent ophthalmologists. It will be seen that this device fulfils the main requirement of iridectomy with much less mutilation and with the retention of the circular pupil unimpaired. It is sometimes performed unintentionally in making the section if the aqueous escapes too rapidly. It has even been suggested that the iridectomy should always be effected deliberately in this manner! It is needless to point out that, apart from the pain experienced, leading to instability of the patient, there is no adequate control under these conditions over the amount of iris removed. If a button-hole be formed during the section the lens will very probably present in the aperture when its expression is being proceeded with. Difficulty will then be experienced in delivering the lens and probably it will be necessary to snip through the bridge of iris. If a small peripheral iridectomy is deliberately adopted it should be done after the lens has been extracted as in simple extraction. The periphery of the iris is then gently drawn out of the wound and the smallest possible fold is snipped off with de Wecker's scissors. The aperture in the iris is peripheral, so that it is almost entirely hidden by the sclerotic, and in any case is completely covered by the upper lid, while at the same time sufficient drainage from the posterior into the anterior chamber is provided for. There are other noteworthy advantages; indeed, there are nearly all the advantages of simple extraction without the drawbacks. Prolapse of iris is less likely to occur than in simple extraction, and it is quite unlikely that capsule will be left entangled in the wound, a decided drawback to extraction with the ordinary form of iridectomy. I can confirm the advantages of this method from personal experience, and I feel strongly that it is worthy of more extended use than it has hitherto had.

In combined and simple extraction the lens is removed, but the greater part of the capsule is left in the eye. Various methods of opening the capsule have been employed. The chief objects to be kept in view are the removal of a maximum amount of the anterior capsule and the avoidance of incarceration of tags of capsule in the wound. There is ample reason for the contention that as much of the anterior capsule as possible should be removed. Unlike the thinner posterior capsule, it is lined with cubical epithelial cells, the function of which is to form new lens fibres. As has been pointed out by Priestley Smith, this function persists throughout life. The new fibres formed after the capsule has been opened are doubtless at first rapidly destroyed and absorbed by the aqueous. At a later stage the anterior capsule becomes adherent to the posterior, so that the new fibres are shut off from the action of the aqueous. Owing to the abnormal conditions under which they are formed they are intransparent and constitute the chief obstruction to the passage of light which is known as the "after-cataract." Hence, when much of the anterior capsule is left the necessity for a subsequent needling arises. Tags of capsule in the wound are only less dangerous than incarceration of iris, and are liable to lead to prolonged irritability of the eye, iridocyclitis or even sympathetic ophthalmia, and glaucoma. For mechanical reasons it is clear that this accident is more likely to occur in combined than in simple extraction. It has already been pointed out that the difficulty is largely overcome by the performance of a small peripheral iridectomy. It is unnecessary to dwell long upon the various methods which have been used of dividing the capsule with the cystitome. Two facts must, however, be emphasised. The cystitome tears, rather than cuts, the capsule, so that each incision made by it results in a triangular flap. It is probably almost, if not quite, impossible to ensure cutting a piece of the anterior capsule cleanly out with the cystitome so that it is removed from the eye with the lens substance. If the cystitome is used a single more or less vertical incision suffices, but a peripheral horizontal incision in the upper part of the capsule, though less easy to effect, is preferable in being less likely to leave tags in the wound. In every case after finally reposing the iris the repositor should be carefully swept along the wound in such a manner as to replace also any tags of capsule which may have been extruded. Greater accuracy in opening the capsule is ensured by performing it as the first step in the operation, a method advocated by Bribosia, Badal, Spencer Watson, and others, and now specially associated with the Madras branch of the Indian Medical Service. Here the capsule is needled as in an ordinary discission operation before the section is made. The objection to this method is solely that loss of the aqueous is difficult or impossible to prevent unless the needles are perfectly made. Everything, indeed, depends upon the shank of the needle completely filling the aperture in the sclera made by the point. Some surgeons, especially those devoted to simple extraction, incise the capsule with the knife whilst making the section. This method is to be regarded rather as a *tour de force* than as one offering any superlative advantages. It requires considerable dexterity, is liable to lead to loss of aqueous at an early stage in the section, and can at the best result in only a small laceration of the capsule.

Efforts directed to the removal of considerable portions of the anterior capsule have led to the invention of various forms of capsule forceps. By their aid as large a part of the anterior capsule as possible is grasped in the forceps and withdrawn from the eye. There can be no doubt that the use of capsule forceps is more dangerous immediately than that of the cystitome. There is some considerable danger of rupturing the suspensory ligament or of dislocating the lens into the vitreous. Their use demands greater manipulative skill, and in my opinion it is not yet fully proved that the advantages outweigh those of other methods. In other words, the risks run may be, and often are, greater than the advantages attained.

With regard to simple extraction, its greatest supporters will admit that though the surgeon sets out to perform this operation he not infrequently finds it necessary to do an iridectomy. The passage of an unusually large nucleus through the pupil may cause so much stretching of the sphincter iridis that the iris shows little sign of elastic recoil. The pupil is now oval and the iris flabby and partially prolapsed. In such a case it is universally recognised that it would be folly not to perform an iridectomy. In other cases, when the indications are less striking, prolapse not infrequently occurs during the first 24 hours, rendering a late iridectomy essential. Should the patient not be under very constant skilled observation during the early post-operative stages the time for effectual interference may be allowed to pass by and irreparable damage may be done. I would, therefore, lay great stress upon the increased anxiety and need for unremitting attention which the surgeon has when he performs the simple operation.

It will be well to enumerate the chief advantages and disadvantages adduced for simple and combined extraction in order that they may be readily compared.

Simple extraction.—The chief advantages of simple extraction are: Simplicity of the operation, including especially minimum of mutilation, of instruments required, and of instruments introduced into the interior of the eye; optical advantages of a round pupil—minimal dazzling, best visual acuity, and best field; cosmetic advantage of a round pupil; ease of reposition of the iris; minimal danger of incarceration of capsule in the wound; infrequency of prolapse of vitreous; greater protection of deeper parts of the eye from infection; absence of pain and bleeding from cutting the iris. Of these it may be remarked that the optical advantages are not overwhelmingly manifest. The cosmetic effect is rarely of sufficient importance to outweigh the risks, though occasionally it is a justifiable argument, as in the case of an unsightly unilateral cataract in a young woman, or in a man in whom it forms a bar to obtaining employment. It is doubtful whether prolapse of vitreous is more frequent in combined than in simple extraction. Bleeding from the iris is only very exceptionally of any importance; when there is much bleeding in cataract extraction the blood is derived from the conjunctival flap or from a too peripheral section. The chief disadvantages of simple extraction are: risks of prolapse of the iris; less efficient treatment of the anterior capsule; greater difficulty in expression of the nucleus; greater difficulty in removal of soft lens matter; greater danger of ring synechia and secondary glaucoma if iritis should occur.

Combined extraction.—The chief advantages of combined extraction are: greater ease in expression of the nucleus; greater ease in removal of soft lens matter; increased facility in dealing with the anterior capsule, and therefore diminished necessity for subsequent discission; diminished risk of prolapse of the iris; diminished risk of secondary glaucoma. The chief disadvantages are: greater complexity of the operation, including especially need of more instruments and of the introduction of more instruments into the eye, and greater duration of the operation; optical and cosmetic disadvantages; greater danger of incarceration of iris and capsule in the wound; greater danger of post-operative glaucoma; pain and bleeding from the iris.

Extraction of cataract in the capsule requires separate consideration. It was first introduced by A. Pagenstecher as a routine method for senile cataracts. His operation was practically that now often known as "scoop extraction" and used for dislocated lenses, &c. The operation, which fell into disrepute, has been revived in India, first by Mulroney at Amritsar in 1890. He used a downward section without iridectomy and expelled the lens by manipulation. Major Smith, however, is the prime advocate of the method. He now makes an upward section with iridectomy; his section is purely corneal with puncture and counter-puncture at the limbus, either in or one millimetre above the horizontal meridian and the summit of the arch "half-way between a normal pupil and the sclero-corneal junction." The advantages of successful extraction in the capsule are easily stated. The pupil is quite black and no portion of the lens or its capsule remains to give rise to an after-cataract. Further, there is no possibility of complications due to capsule, such as entanglement in the wound, synechiæ, &c. On the other hand, it cannot be denied that the dangers are relatively enormous. In the hands of most surgeons prolapse of vitreous is of frequent occurrence. This is a most serious accident, and any tendency to under-estimate it cannot be too strongly deprecated. It is not only that the immediate effects—delay in healing of the wound, grave liability to infection, &c.—are harmful, but many more insidious remote effects are likely to occur, such as the formation of opacities in the vitreous, detachment of the retina, &c. In practice in India these remote effects are liable to pass almost unnoticed

owing to the impossibility of keeping the patients under prolonged observation. Major Smith's statistics show an extraordinarily low percentage of cases with loss of vitreous—between 6 and 7 per cent. in 1903 to 1905, and still less since that period. Other surgeons, chiefly practising in India, who have been induced by these results to try the method have in no case attained such brilliant success—e.g., Oxley, 30 to 40 per cent.; Birdwood, 47 to 37 per cent.; and Maynard, 38 per cent. This extreme divergence must be due to some grave fallacy which must be discovered before the operation can be recommended for general use. Besides loss of vitreous other accidents are prone to happen—for example, rupture of the capsule during the delivery of the lens, a manœuvre which requires considerably more force than in ordinary extraction. Further, incarceration and prolapse of the iris are more liable to occur and prolonged irritability of the eye is not uncommon. The general conclusion to which one is forced is that the operation is unsuited for the routine treatment of senile cataract, but that it will still retain its place for certain complicated conditions which need not be discussed now.

A Clinical Lecture

ON

SENILE EPILEPSY, AND THE VERTIGINOUS ATTACKS WHICH SUPERVENE FOR THE FIRST TIME IN ADVANCED LIFE, ILLUSTRATED BY A CASE OF CARDIO-ARTERIAL HYPERMYOTROPHY.

Delivered at the West-End Hospital for Diseases of the Nervous System, on July 1st, 1909,

BY THOMAS D. SAVILL, M.D. LOND.,

PHYSICIAN TO THE HOSPITAL.

GENTLEMEN,—Elderly patients often come to us for "giddiness," "faints," or "epilepsy," and we call these symptoms senile because they have supervened for the first time in advanced life. I ask your attention to their causes and pathology.

The patient who forms the subject of my remarks is a man whom I will call A. B., aged 62 years. He came to this hospital on June 1st for "epileptic fits" which had supervened for the first time 18 months ago (Christmas, 1907). He had a chancre when about 26, but has had no symptoms since, and his wife has had eight healthy children. Since the age of 15 he has had attacks of migraine, preceded by scintillating scotoma of the typical zigzag pattern (here is a sketch he has made of it), followed by headache lasting an hour or so. He has, however, had an otherwise healthy life as a clerk, and never had any convulsive attack till after he was 60. The epileptic fits are of some severity and appear to have all the characters of idiopathic epilepsy. First there is a visual aura, with flushing of the face, "the vision becomes dim, everything seems on the move," and zigzag lights appear; then he loses consciousness completely. He becomes rigid, and "struggling movements" of the limbs ensue. At times he has bitten his tongue, has had "foaming at the mouth," and micturated involuntarily. The fits last from half an hour to an hour and then he recovers. He has had one such fit every four or five weeks during the past 18 months—nearly always the first thing in the morning. The aura of these fits is interesting. In the main, you will observe that it is the same zigzag visual aura which has preceded the attacks of headache almost throughout life. Sometimes, as in idiopathic epilepsy, the aura occurs alone; sometimes during the past 18 months it was followed by convulsions. In the latter case the aura is associated with visible flushing of the face and a feeling of fulness in the head. He says: "When these fits come on I feel hot in the face and my head feels as though I had been stooping." This flushing of the face also occurs at other times. My colleague, Dr. James Mackenzie, to whom I sent the patient for his opinion on the heart and circulation, wrote me: "When being examined his face suddenly became red and suffused, and he tells me he is liable to these attacks of flushing." These flushings and the migrainous attacks with scintillating scotoma throughout life are evidences, in my belief, of vaso-motor instability, especially in regard to centres for the head and face.

This patient has two other head symptoms. He has often had "swimmings in the head and things going round" (vertigo) of late years, and he complains that he has strange "unreal sensations" in the head—i.e., disturbances of thought, coming on particularly after getting out of bed in the morning. He has never had any syncopal or fainting attacks. This patient is a careful observer, and his business training has induced him to keep a diary for June. Here it is:—

June 2nd. Convulsive fit, seven minutes' duration.
June 3rd to 9th. Strange unreal sensations in the head after rising in the morning, passing away two or three hours later.
June 11th to 16th. Head strange every morning.
June 17th. Slight affected 9.30 P.M., lasting 25 minutes (no fit).
June 18th to 22nd. Shaky; giddiness at times.
June 24th, 9.30 A.M. My face became flushed, followed by sight being affected with zigzag visions lasting 30 minutes (no fit).
June 25th to 30th. Giddy sensations on getting up every morning and during the day sometimes.

I examined this patient carefully on June 3rd and found: Very high blood pressure (210 millimetres by Hill and Barnard's instrument); his pulse-rate was 96; notable hypertrophy of the heart associated with some dilatation, apex 1½ inches outside the nipple line, reduplicated first sound in mitral area; the superficial arteries were all thickened to the feel and smooth as in arterial hypermyotrophy, not beaded as in atheroma; no paralysis or any other sign of disease of the motor or sensory apparatus or special senses, no fundal changes in the eyes; all the deep reflexes were, however, notably increased; the mind was quite clear and he regretted that his bank had retired him from the post of cashier; the urine was 1015, clear, pale, acid, no albumin, no sugar, no casts. The total quantity of urea and of salts was not deficient. Dr. Mackenzie examined him on June 12th and reported: "I can find nothing in A. B.'s *cardiac* condition to account for his convulsive attacks. The heart is hypertrophied, the blood pressure very high (235) and no albumin in the urine, and, as you say, arterial hypermyotrophy." Dr. Mackenzie had in mind the possibility of "heart block" which I shall refer to directly.

CAUSES OF SENILE EPILEPSY.

Let us now consider what are the possible causes of epileptiform convulsions supervening for the first time in advanced life.

1. The first condition that occurs to one in connexion with this case is *idiopathic epilepsy*, and the characters of this patient's seizures conform to that malady. But the most important feature of idiopathic epilepsy is that it is due to something which is peculiar to the individual; something which is born with him or her and lasts throughout life. All authorities are agreed that true epilepsy starts for the first time in youth and the tendency lasts throughout life. Personally, I do not believe idiopathic epilepsy ever comes on for the first time in the latter half of life. In all my experience here and at the Paddington Infirmary and Workhouse, where I had 600 to 800 old people ill or well constantly under my care, I never saw a case of undoubted epilepsy (*grand mal* or *petit mal*) occurring for the first time in the latter half of life. Undoubtedly, when one or two true attacks have occurred in early life they may recur after a long interval. But there is no history of previous fits in this case at any time prior to the age of 60.

2. *Hysterical convulsions* may supervene almost at any age though they are commonest about the evolution and involution of the sexual functions. They are practically limited to the female sex; they are generally initiated by some emotional upset and start with some emotional outburst like crying and laughing; there is nearly always a history of previous nervous attacks or other evidence of the hysterical diathesis. But this case does not conform to hysterical attacks of any kind.

3. *Intracranial syphilis* is the most frequent cause among my out-patients of convulsive fits occurring for the first time in persons over 30 years of age. Sometimes these are due to a gummatous deposit in or upon the brain, sometimes to a more or less localised meningeal thickening, sometimes to a

diffuse meningitis, and occasionally no gross changes can be found beyond congestion of the cortex. If the lesion is more or less localised the clonic movements are limited in extent and not necessarily attended by unconsciousness (Jacksonian epilepsy). Syphilitic fits are also known by being associated with continuous headache, worse at night, and there may be optic neuritis, paralysis of the sixth nerve, pupillary changes, or other scattered cranial nerve symptoms. In several cases I have found that an absence of pupillary light reflex has been the earliest, and for a long time the only, manifestation of syphilitic disease of the nervous system. I remember one patient in particular who was under my care for nearly 20 years, who used to see me from time to time to overhaul his nervous system because he feared that the disease might manifest itself here. Sure enough at length I discovered an immobility of the pupils to light, but it was three or four years before there was any other symptom of any kind referable to the nervous system. Then other symptoms of general paralysis of the insane gradually appeared and he died from this disease, after a series of the most violent convulsive fits, only a few months ago. One must always bear in mind that epileptiform convulsions of syphilitic origin may supervene for the first time in advanced life. The patient who forms the subject of this lecture had syphilis when he was 26, but was thoroughly treated and has had no symptoms since. His pupils act well, the fundi are normal, and I can find no evidence of syphilitic disorder of the nervous system. The fits, from his account, do not appear to be localised, though his wife thinks the movements predominate on one side. It is possible that the fits in this patient may be due to one of the syphilitic lesions just referred to, though it is hardly likely they would have recurred for 18 months without other symptoms of the disease becoming manifest.

4. *Cerebral tumour* gives rise to Jacksonian epileptiform fits—i.e., tonic or clonic spasms starting in, and often limited to, one limb, not usually accompanied by loss of consciousness. This patient's fits and symptoms do not conform to this type.

5. *Chronic degenerations of the nervous system* may give rise to epileptiform convulsions and these may supervene for the first time in old age. General paralysis of the insane, as in the case just mentioned, is perhaps the most frequent of these. Disseminated sclerosis, tabes dorsalis, and paralysis agitans may also be mentioned. The symptoms proper to these diseases are wanting in this patient.

6. *Cerebral pachymeningitis*, particularly pachymeningitis hæmorrhagica, may give rise to occasional convulsions extending over a long time. The specimen I show you reveals this condition in the meninges of the cord. The condition is not very common; speaking from memory I met with only about five or six cases in seven years at Paddington. It is associated with mental hebetude not existing in this patient.

7. *Uræmic convulsions* are more frequently met with in persons over 50 years of age than under. They are accompanied by the other signs of uræmia—e.g., sleeplessness by night and drowsiness by day, muscular tremors and restlessness, causeless vomiting, paroxysmal dyspnœa, with casts and other definite evidences of renal disease—which are not present in our patient. Moreover, uræmic convulsions would not recur in this way for 18 months. They are late signs of uræmia and death generally occurs after the first or second attack. When he first came, June 1st, 1909, our house physician found a faint trace of albumin and the specific gravity was 1010, but neither Dr. Mackenzie nor I have found any albumin since and the average specific gravity is 1016. The urea and salts are not deficient on analysis of 24 hours urine, no casts have been found, and the renal functions are adequate.

8. *Various other toxic conditions* may give rise to epileptiform convulsions supervening in advanced life, such as alcoholism, especially in a chronic alcoholic after a drunken orgie; lead poisoning, occasionally, when other symptoms of plumbism would be present; various drugs given in overdose or attempted poisoning—strychnine (when the convulsions are mainly tonic), belladonna, strophanthus, stramonium, aconite, veratrium viride, sabadilla, hydrocyanic acid, in all of which the convulsions come on suddenly, other symptoms of the drug are present, and the case terminates one way or the other in 24 hours; tetanus (in which the spasms are chiefly tonic) and malaria in adults; and the onset of the acute specific fevers in children.

9. Convulsions also occur with *diabetes*, and with *choræmia* in the terminal stages of diseases of the liver such as acute yellow atrophy. There are no evidences of these in our patient.

CIRCULATORY CAUSES.

10. *Hæmorrhage, thrombosis*, and *embolism of the brain* are attended by an epileptiform seizures in about, roughly, one-third of the cases. Convulsions are more frequent in hæmorrhage than in embolism, but usually they do not occur in either unless the damage is of considerable extent. Among the old patients at the Paddington Workhouse were many who had what they called "giddy" and "fainty" attacks without definite convulsive seizures. In the brains of these old people, when they died a few years later, careful search would sometimes reveal a number of minute scars of varying shades of colour according to the age of the scar, the result of small emboli, thrombi, or hæmorrhages which had taken place from time to time without producing epileptiform seizures. However, if these lesions were sufficiently large to produce a convulsive fit it was almost certainly followed by hemiplegia or some other form of paralysis, and our patient has never had any kind of paralysis even after 21 fits.

11. *Cardiac weakness* or failure of any kind often gives rise to vertiginous and more particularly to syncopal attacks in the aged—these may be the first intimation of cardiac failure. The pulse then probably indicates low tension, though not necessarily; the tension is never high, but it may be fairly normal owing to a high peripheral resistance. Such symptoms are serious but they yield to ether, ammonia, and cardiac tonics. Cardiac weakness alone does not, I believe, as a rule give rise to convulsions, at any rate with recovery, though I have recorded one interesting example.[1] Syncope and vertigo are common with cardiac failure, convulsions are rare, and A. B.'s heart is not failing but hypertrophied.

12. *Arterial disease* was, in my experience, at the Paddington Workhouse and Infirmary the most frequent cause of syncopal and vertiginous attacks in the aged, even without any discoverable cardiac defect. This vertigo is a postural vertigo. It comes on after they have been stooping or when getting out of bed in the morning, or after getting up suddenly from a chair, or other sudden variation of posture.

The circulation is like a balance of two opposing forces, the heart and the arteries—the heart muscle and its regulator nerve-mechanism on the one hand and the muscular tissue of the arteries and its vaso-motor regulator mechanism on the other. Anything which upsets either of these opposing forces upsets this balance and deranges the peripheral circulation either in the way of increase or diminution and particularly at the top of the column (the head). Further, there is a balance between the different parts of the arterial system which is regulated for postural and other variations, particularly between the top of the column of fluid (the head) and the large reservoir in the splanchnic vascular area in the abdomen; this balance depends on the integrity of the involuntary muscular tissue of the arteries and of the vaso-motor nerves and centres. Every bodily movement affects this balance and unless the vaso-motor and muscular apparatus, both of the heart and of the arterial system, are in good order syncopal and vertiginous sensations in the head occur. I have shown elsewhere[2] that there is in a good many persons past middle life an increase in the muscular coat (the functionally active coat) of the arteries. The muscular tissue is also apt to become rigid and granular (this is not a fibrosis as Gull and Sutton, using imperfect methods of preservation and staining, believed) and the muscular fibres undoubtedly become less contractile. This arterial hypermyotrophy and other forms of intimal or adventitial sclerosis seriously disturb the balancing powers of the arterial system, and postural vertigo is the result. These "fainty," "swimmy" feelings were so common amongst my old people that they paid no attention to them. Sometimes they were severe and led to falling down or falling off a chair. I do not think true syncope or convulsions often occurred in uncomplicated arterial disease

[1] Lectures on Hysteria and Allied Vaso-motor Disorders, H. J. Glaisher and Co., London, 1909, p. 238.

[2] On Arterial Sclerosis, especially in regard to Arterial Hypermyotrophy and the other Morbid Changes which occur in the Muscular Tunic of the Arteries, Transactions of the Pathological Society of London, 1904.

without some associated cardiac failure on the one hand, or cardiac hypertrophy on the other.

13. *High blood pressure and cardio-arterial hypermyotrophy* may undoubtedly give rise to convulsive seizures and other head sensations occurring for the first time in advanced life. I am not aware whether any observations have been made on the blood pressure in epileptic and other convulsions—these would be very important and interesting—but I have seen many cases of very high blood pressure and cardio-arterial hypermyotrophy, without other defects, attended by convulsions. Both of these circulatory derangements undoubtedly exist in A. B., and I believe them to be the cause of his convulsive attacks. The history and physical signs of his case exclude all the other possibilities. Uræmia is the only other cause worth discussing and uræmic convulsions would hardly recur for 18 months, without some definite evidence of renal disease; there is no albumin or casts and the urine is only limpid, as in all cases of high blood pressure. I shall put him on treatment to lower the blood pressure and will report to you the result at our next meeting.

This case would probably still be regarded by some as one of "chronic Bright's disease," but I think this name should be reserved for cases in which there is definite evidence of renal disease as the primary and principal malady. Here all the symptoms are circulatory and the case may, in my view, be briefly expressed as one of cardio-arterial hypermyotrophy and high blood pressure consequent on a long series of constantly recurring high tension such as would be produced by his vaso-motor defect (scintillating scotoma and headaches) throughout life, coupled, perhaps, with toxæmia. It is not sufficiently recognised that renal disease is not the only cause of high blood pressure. One of the first things that struck me in my researches into arterial disease at the Paddington Infirmary in 1886–92 was the fact that many cases which died from apoplexy or other consequences of high blood pressure presented absolutely healthy kidneys. I wish to protest once more against including all cases which present high blood pressure, cardio-arterial hypermyotrophy, and urine of low specific gravity with an occasional trace of albumin, in the category of chronic Bright's disease. High blood pressure, as Sir Thomas Clifford Allbutt has often insisted, is a definite pathological condition with a sufficiently definite group of symptoms to receive a definite name—hyperpiesis is the name he suggested. Among the *causes* of hyperpiesis renal disease is certainly one, but there are also many toxins produced within the body, such as those of gastric and intestinal origin, or introduced from without, such as lead, which can cause hyperpiesis apart from renal disease. Urine of low specific gravity always occurs with high blood pressure; it is one of the symptoms of high blood pressure (no matter what is the cause in operation). When old people go out of doors in very cold weather their blood pressure goes up and their urinary specific gravity goes down. Pathological and long-continued high blood pressure (no matter what its cause) is often attended by a trace of albumin in the urine, and I even go so far as to believe, though I am not yet in a position to prove it, that some of the conditions we call contracted granular kidney are a consequence, rather than a cause, of long-continued or recurrent high blood pressure. Among the *consequences* of constantly recurrent high blood pressure is, as I have shown,[3] a slight but definite increase in the muscular tunic of all the arteries, and that this muscular tissue may become faintly granular and rigid, which leads not only to its non-adaptability to alterations in posture as I have just mentioned, but it also leads to cardiac hypertrophy. Then follows a struggle or opposition between the heart on the one hand and the arterial system on the other. That is what is now going on in our patient, in whom at present the heart is winning. In course of time one or other must accept defeat (degeneration and dilatation) unless in the meanwhile rupture takes place somewhere. If his vessels will dilate ever so little he will lose his symptoms and pass to a comfortable old age.

14. There is yet one more cause of convulsions supervening for the first time in advanced life—*Adams-Stokes disease* or *Heart block*. It is a morbid condition, first described by Adams in 1827 and more fully in 1836 by Stokes. It is characterised by a permanently slow pulse with syncopal and epileptiform attacks. It is due to a defective cardiac action. Dr. Mackenzie has shown, by tracings taken on the jugular vein, that although the auricle may be contracting, say, 80 to the minute, the ventricle may contract only 40 or less, missing one or more alternate beats.[§] The condition is probably due to fibrosis or some other defect in the bundle of His, which normally transmits the cardiac stimulus from auricle to ventricle. The patient may come to you for dyspnœa or other cardiac symptoms or for epileptic attacks. A. B. has not got this condition. Less severe attacks, more of a syncopal type, may occur, as illustrated in the patient whom I now show you, aged 53, and who has only had one such attack. His pulse has always averaged 45, and his blood pressure at one time averaged 195. His case, I think, also illustrates the value of the high potential current in cases of high blood pressure.

[3] Loc. cit.

TREATMENT.

By way of *summarising the pathology* of the various forms of syncopal, vertiginous, and epileptiform seizures which occur for the first time in advanced life my experience among the aged has led me to the following conclusions:—

1. That idiopathic epilepsy never arises for the first time in advanced life.
2. That at least nine-tenths of these syncopal, vertiginous, and epileptiform seizures are circulatory in origin.
3. That senile syncope is generally due to cardiac failure and low blood pressure.
4. That senile vertigo and similar head sensations (postural vertigo, interruptions of thought, &c.) are due to the disturbances of the regulator mechanism of the arteries in different parts of the body owing to arterial hypermyotrophy or other arterial disease, not necessarily accompanied, as far as my observations go, by any notable alteration of the general blood pressure or of cardiac increase or diminution.
5. That senile epilepsy (convulsive attacks) is generally due to increased blood pressure with cardio-arterial hypermyotrophy.

All these attacks of senile syncope, senile vertigo, and senile epilepsy merge into and are associated one with the other; vertigo may occur at one time, convulsions at another, and the same patient may in the end die from syncope (when the heart is defeated).

The *treatment* of epileptiform and other like seizures occurring for the first time in advanced life follows naturally from the preceding remarks. Having investigated the other possible causes, the main thing is to concentrate our attention on the circulation—examine the heart, the arteries, and above all (from the point of view of treatment) the blood pressure. Then we must be guided by what we find to administer treatment to raise or lower blood pressure and to tone or to steady the heart.

This patient, A. B., presents three conditions: (1) Inherent instability in the vaso-motor centres throughout life; (2) cardio-arterial hypermyotrophy; and (3) extremely high blood pressure. There may be a toxæmia. For the first bromides are useful to steady the instability, but nothing will eradicate it; for the second nothing can be done to remove the structural changes; for the third we can do much by a spare, well-regulated diet and by such remedies as the iodides, nitrites, &c., and regular purgation. The treatment of high blood pressure often falls within the province of the neurologist, and we may bear in mind that most of its known causes come under four headings: (1) *Deficient elimination* or deficient oxygenation of nitrogenous food, alcohol even in moderate doses in some, sedentary habits, and constipation; (2) various *toxæmic conditions*, such as renal disease, gout, intestinal toxins, diabetes, plumbism, &c.; (3) any condition leading to a recurrent *spasmodic contraction* of the arterioles, such as migraine; (4) plethoric conditions generally—a very good reason for bleeding, which is undoubtedly one of the promptest, most efficient methods (and, strange to say, the good effects will last a very considerable time) of relieving high blood pressure. It is nature's method. I can remember several of my old patients who remained well as long as periodic epistaxis (every six months or so) occurred, but when this ceased they incurred apoplexy and died, or became imbecile paralytics. We should do well sometimes to imitate nature's methods of dealing with her own difficulties.

THE RÔLE OF THE PERINEAL BODY DURING LABOUR AND THE CONDUCTION OF DELIVERY IN RELATION THERETO.*

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THE perineal body is that collection of tissues, which is wedge-shaped on mesial sagittal section, situated between the divergent extra-pelvic part of the vagina and anal canal. It is limited below by the skin between the anterior margin of the anal orifice and the fourchette, and laterally it passes outwards towards the ischial rami and tuberosities, to lose itself in the fat of the ischio-rectal fossæ. Since it is situated below the musculature which, with the coccyx and the ano-coccygeal raphe, forms the pelvic floor, it is outside the influence of the intra-abdomino-pelvic pressure, and for this reason, and because of the paucity of its tissue contents as palpation in the living readily discloses, it is plain it can play no part in the support of the pelvic viscera, nor can it be maintained that its rupture facilitates prolapse.

It is composed of subcutaneous tissue in which are embedded superficial muscles which have evolved from the superficial layer originally surrounding the primitive cloaca and which, like that, are sphincteric in function. Thus, the most—indeed, the only—conspicuous elements found within it clinically are the anterior parts of the two sphincters of the anal canal, both of which, by passing a finger into the rectum and another into the vagina, can be easily felt and their limits defined. The scanty pre-rectal fibres of the pubo-rectalis muscle, those passing to the perineal body from each side and forming a link between its two arms of origin and upon which Piquand and Hue[1] lay so much stress, cannot even be perceived by palpation. Further evidence of its structural weakness is shown by those cases in which part of the child—e.g., its arm—is burst through its tissues to be born at the anus, or in which the child itself has traversed bodily through it. Its thinness, the occasional occurrence of its central rupture, and the partial or complete laceration of its tissues so frequently found in women in whom the pelvic viscera are efficiently retained within the pelvis, all point to its insignificance and demonstrate its incapacity to play a part in the support of the viscera; a conclusion amply confirmed by the many failures which result in the attempt to cure prolapse by its repair alone. In spite of such facts, this truth concerning the perineal body has not been sufficiently recognised. Emmet[2] in 1883 clearly showed his poor opinion of it; but in spite of the indisputable facts he brought forward, his audience ridiculed him.

During childbirth, however, the perineal body exercises a far-reaching influence on the mechanism of delivery, an influence which is neither necessary nor good. That the part it plays is not necessary is shown by the occurrence of quite normal labour in cases of its previous rupture; that it is not beneficial is the task I have taken upon myself to show.

It is universally known that the fœtal head, which passes through the pelvic cavity flexed and which impinges upon the pelvic floor in the same attitude, is extruded from the body by a movement of extension. This mechanism may be divided into two periods: (1) in which primary extension occurs, caused by the resistance of the pelvic floor; and (2) in which secondary or continued extension occurs, caused by the resistance of the perineal tissues. That is to say, the occiput rotates around the bony unyielding boundary in front, whilst the forehead and face sweep past the stretched superficies of the levator, the stretched posterior commissure of the pubo-rectalis muscle, and the stretched tissues between this and the vulvar outlet—i.e., the flattened-out anal canal and perineal body.

The fœtal head in its descent first meets the superficies of the levator (region of coccyx); indeed, it is directed downwards and backwards from above and necessarily must do so. Not only is this evident by the bulging of the tissues behind the anus, but also on palpation of this region the hard head can be felt. Descent occurs. The coccyx is caused to recede and the levator becomes deepened and transformed into a broad, gutter-like declivity, sloping downwards and forwards, in which are placed the empty and flattened-out rectum and the intra-pelvic part of the vagina with the fœtal head. This deepening and widening of the levator takes place by a lengthening of its muscle fibres—i.e., of the iliococcygei—which pass inwards and backwards from the lateral pelvic walls to the ano-coccygeal raphe. At the inferior extremity of this gutter-like formation into which the pelvic floor is converted, the displaced and stretched posterior commissure of the pubo-rectalis muscle is found.

This muscle—called the pubo-rectalis, because it passes backwards from the pubes and encircles the rectum, the arm of origin of one side becoming continuous with the arm of origin of the other behind the gut,[3] surrounds the aperture in the pelvic floor through which the urethra, vagina, and rectum pass to reach the surface of the body from the pelvic cavity. During childbirth the pelvic floor aperture is enormously distended, and the muscle which surrounds it in a sphincter-like way correspondingly stretched. It is only when this dilatation of the aperture and stretching of its muscular boundary has been begun by the advancing pole of the fœtal head that this meets with the tissues situated beyond the aperture—i.e., the tissues surrounding the extra-pelvic part of the vagina[4] and the vaginal and vulvar orifices, of which the perineal body forms the posterior and most yielding parts.

Great as is the displacement of all these tissues during childbirth (i.e., of the pelvic floor itself and of the superficial tissues situated beneath it), that of the pubo-rectalis muscle is not so marked as one would think, for the increase in length of the tissues between the tip of the coccyx and the fourchette, which occurs during parturition, is for the most part the result not merely of a displacement but also of a marked stretching of the superficial tissues—i.e., of the anal canal, perineal body, overlying skin, extra-pelvic part of vagina, and superficial muscles (ext. sphincter); but whilst probably the raphe of the pelvic floor itself (ano-coccygeal raphe) stretches to some slight extent the chief change in this is limited to its displacement. This is shown by the position of the anus and by the anatomical fact that the posterior commissure of the pubo-rectalis is above and behind it. At the acme of birth the inferior margin of this muscle posteriorly is on the average about five inches distant from the fourchette. One has but to recall the enormous stretching of all these parts, the dilatation of the anus measuring as much as an inch or an inch and a half, and the extraordinary increase in length of the antero-posterior base of the perineal body measuring three inches or more (i.e., from the anterior margin of the dilated anal orifice to the intact fourchette) to realise how much all these superficial tissues beyond the pelvic floor extend and how thin they become. If we allow the distance from the inferior margin of the pubo-rectalis muscle to the posterior margin of the anal orifice to measure another inch, and it can scarcely be less than this, the five inches are accounted for. A comparison of the increase in the length of the tissue between the tip of the coccyx and the posterior margin of the anus with that in those between the same limit of the anus and the fourchette demonstrates how much greater is the stretching in the latter than in the former, the increase of which is largely due to the alteration in direction which the anal canal undergoes.

This stretching of the superficial tissues occurs, not only antero-posteriorly, but also transversely, and is accompanied by considerable tension. This tension demonstrates that they are offering a considerable resistance to the onward progress of the fœtal head. The tension in the transverse direction signifies a closer pressure upwards and forwards of the fœtal head against the pubic arch; whilst the tension antero-posteriorly determines its more forward and even upward projection, or rather of its anterior segment, for the

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* A paper read before the Obstetrical and Gynæcological Section of the Royal Society of Medicine on Jan. 14th, 1909.

[1] Revue de Gynécologie et de Chirurgie Abdominale, January-February, 1908.

[2] Study of the Ætiology of Perineal Laceration, Transactions of the American Gynæcological Society, vol. viii., p. 196, 1883.

[3] The part of the muscle behind the gut is the "posterior commissure." This is not to be confused with the "posterior commissure" of the vaginal orifice, which is placed below the pelvic floor.

[4] The extra-pelvic part of the vagina is that part situated between the pelvic floor aperture and the vaginal orifice (situation of hymen). Normally, it measures about a half to three-quarters of an inch in length. During childbirth, its posterior wall, which is closely incorporated with the tissues of the perineal body, becomes markedly lengthened as well as stretched from side to side.

fœtal head has now become converted into a relatively long ovoid. Owing to the stretching of the perineal tissues in the antero-posterior direction, the plane of the vulvar aperture becomes extremely oblique and approaches the coronal plane. That is to say, it looks considerably forwards. But the plane of the pelvic floor aperture is not nearly so oblique; it is, in fact, not far removed from the horizontal plane (i.e., in the erect posture); it still looks much more downwards than forwards—the location of its posterior commissure above and behind the anal orifice demonstrates this. Thus whilst the posterior extremities of the planes of these two apertures are considerably distant from one another, their anterior extremities are in close approximation. Since these apertures, although superimposed, are not in planes parallel with each other, it follows that an ovoid body passing through them at the same time must, whilst it is passing through one with its long axis perpendicular to the plane of that aperture, pass obliquely through the other. As the head reaches the pelvic floor aperture, bounded laterally and posteriorly by the pubo-rectalis muscle, it begins to dilate it by endeavouring to pass through it with its long axis at right angles to the plane of the aperture, for the resistance of the aperture causes the smallest circumference to distend it. When, however, the anterior extremity of the fœtal head has extended beyond this aperture it impinges upon the perineal body, and in its endeavour to maintain its direction and to continue with its long axis in the same straight line it forces the tissues of the perineal body downwards, which stretch in front of it, and in virtue of their tension resist its advance.

When the hand of the child is placed posteriorly to its head within the birth canal and presents with it, it is easy to understand how it can be forced through the apex of the perineal body into the rectum, for it is only separated from this passage by the posterior vaginal and anterior rectal walls and the intervening connective tissue. It does not burst asunder the fibres of the pelvic floor musculature, but it passes through the pelvic floor aperture in a quite regular manner, and only deviates from one passage (vagina) to the other (rectum), both of which leave the pelvis by passing through the same aperture in the pelvic floor. And if in an ordinary vertex presentation with the arms in their usual position, the head is forced straight onwards against the perineal tissues, and these are not able to deflect it forwards, because it may be they yield too easily, not only do they stretch but, provided the uterine contractions are sufficiently strong, they also rupture, the child passing through the breach, leaving the fourchette and vaginal orifice perhaps intact. In this case, too, the transit through the pelvic floor is regular, and it is an error to suppose that its musculature is injured because of this event.

Usually, however, in spite of considerable stretching of the tissues of the perineal body, and because of their position, their tension, and the resistance they offer to its progress, the extension of the head which is begun by the pelvic floor itself is continued, as can be seen in primiparæ. That is to say, the advancing pole of the head is deflected. This is easily accomplished, for owing to the length of the fœtal head a comparatively slight force will cause the direction of its long axis to change. So that, if the head enters the vulvar aperture, now considerably removed from its former position, with its long axis at right angles, this must necessarily determine that the head shall have changed its course, and that its long axis shall no longer be passing at right angles through the plane of the pelvic floor aperture, but that it shall have become oblique. That is to say, that the pubo-rectalis muscle, instead of embracing a circle of the fœtal head, finds itself applied to an ellipse, the circumference of which is considerably greater than that of a circle, and therefore the muscle is correspondingly increased in length and subjected to a correspondingly increased stretching. If, however, the vulvar aperture is destroyed by a laceration, the movement forwards of the anterior extremity of the fœtal head does not occur, an oblique diameter does not occupy the pelvic floor aperture, and this, therefore, escapes a greater distension.

That the intact and unimpaired perineal body is, in fact, instrumental, by causing this increased distension of the pelvic floor aperture during childbirth, in effecting those changes upon which a subsequent prolapse has its possibilities (relaxed pelvic floor aperture), is shown by the fact that often we find in cases of prolapse that, whilst the perineum has not been torn, there is marked evidence of its having been considerably stretched, such as can only be accounted for by the part it plays in causing secondary extension of the head. These cases have been explained by supposing that a subcutaneous or sub-mucous laceration has occurred: an untenable hypothesis in view of the fact that when these tissues as well as the skin and mucous membrane have been lacerated a prolapse by no means necessarily results, for it is quite common to see a lacerated perineum, so far from being subsequently complicated by a prolapse, to be quite free from visceral extrusion. Nor can these cases be explained by supposing some change or increased intensity of action of the intra-abdomino-pelvic pressure, the determinant of prolapse, has occurred. There is no doubt that the perineal body does play a part in childbirth to the detriment of the pubo-rectalis muscle; and that a laceration of its tissues by permitting birth with the least possible distension of the pelvic floor aperture may undoubtedly in some or in many cases prevent that injurious elongation or possible rupture of the muscle fibres (pubo-rectalis), which, limiting the aperture laterally and posteriorly, cannot when injured so efficiently guard it, and thus disposes to this dystrophy.

It is not to be thought that the perineal body exerts always a baneful influence, because all it can do is to determine an increased distension of the pelvic floor aperture; that is not necessarily an increased injury to the pubo-rectalis muscle, although this implies a greater elongation of its fibres; and as a factor in causing impairment of the muscle it is to be regarded in the same light as the size of the fœtal head. When this is small and remains more or less spherical during birth its continued extension will not cause an increased stretching of the muscle; when, however, the head is large and is moulded to the ovoid shape by its transit through the bony pelvis the slightest degree of this secondary extension will determine an increased stretching which may "precipitate" a laceration of the muscle fibres, or if this has already occurred may cause a greater injury.

Nor does the fact that in some cases a prolapse is found subsequently to co-exist with a perineal laceration negative the view here put forward. Rupture of the muscle fibres does not alone depend upon the elongation to which they are exposed; they are living tissues, and it is the manner in which they react to this lengthening which determines their laceration. This again depends upon the time in which they are allowed to stretch and is more likely to occur when the stretching is sudden (precipitate labour) than when it is gradual. It also depends on their condition of tone and their resistance to this stretching, conditions determined by the general health and the straining. Other conditions being equal, it is certain the greater the stretching the more probable the injury, and, the fœtal head being normal (i.e., ovoid in shape) and its size remaining constant, it is also certain that the stretching of the pubo-rectalis muscle will be the greater when secondary extension of the head occurs during birth, least when this extension is prevented as much as possible.

But such cases may be explained in another way. It is well known that tears of the perineal body often begin in the recto-vaginal septum; and it is easy to understand how deflection of the anterior pole of the head forwards towards the symphysis will determine an increased stretching of the vaginal tissues, just as it does to the pubo-rectalis muscle situated at the same level; and that if an injury is to occur as a result of this stretching it will do so posteriorly, where the movement of the fœtal parts is greatest. This extension of the head, then, may not only cause an injury to the pubo-rectalis muscle, but simultaneously a laceration of the perineal tissues. But when the perineal tear begins at the fourchette and passes backwards and upwards, it is caused in a different manner (by direct pressure of the advancing fœtal pole, not of a posterior part of the head, and instrumental delivery), and with a different result, for this allows secondary extension to diminish, or prevents its occurrence.

If during delivery these perineal injuries are prevented, or endeavour is made to prevent them, either by opposing the advance of the fœtal head, and thus allowing time for sufficient stretching, or by actually supporting the perineum, no good is achieved other than a preservation of these tissues; but much harm may accrue to the pubo-rectalis muscle from such manœuvres. And it would seem that an early perineal tear, and one

beginning at the fourchette, in the place of being a disaster is often a blessing in disguise. Yet much is done nowadays to prevent perineal tears, and one institution vies with another in the hope of obtaining the smallest percentage of these trifling injuries. Further, so much insistence is laid on the immediate and accurate suture when laceration does occur that it is impossible but to think the advocates of these measures consider the perineal body subserves important functions in connexion with the visceral support. Perineal tears should be regarded in the light of superficial wounds elsewhere and treated in the same way. When the external sphincter of the anal canal is ruptured this indeed calls for repair; but when the laceration is "incomplete" there are only two reasons why it should be sutured: (1) to check hæmorrhage, and (2) to prevent infection of the wound and subsequently of the vagina. The question of "cosmetic effect" can scarcely influence us. To lay the emphasis that is laid on the repair of these tissues from the point of view of subsequent visceral support is surely to mislead, for we know that prolapse frequently does not occur even when the rupture is complete. Thus Matthews Duncan stated that a knife could be passed into the anus and brought out at the vulva and all the tissues divided between with no resulting prolapse. He based his statement on the experiment Nature so frequently performs for us, and pointed to the not uncommon cases of complete tear of the perineum without prolapse. He indeed thought that the cause of this non-descent was because the viscera were maintained in position by a suction upwards (i.e., atmospheric pressure), but we know now that the reason of this postural maintenance is caused by the continued activity of the pelvic floor musculature, which passing *behind* the anal canal remains intact in spite of such an incision.

If, then, the facts we have recited are true, and clinically we know them to be true, the question arises, What is the best method to adopt during delivery? It is obvious that attempts should be made to prevent secondary extension of the head. This is best done by the method described by Toff,[5] who advocated it as a means of perineal protection. When the anterior extremity of the head has appeared at the vulva and begins to distend it, two or more fingers should be placed between it and the symphysis pubis and traction exerted backwards. This should be especially done during the pains. It will be found that the natural tendency on the part of the head to extend can be easily overcome. Simultaneously, pressure may be applied above and behind the anus and is exerted upon the upper pole of the fœtal head, not only tending to maintain the attitude of diminished extension but also actively assisting the expulsion of the head. It may be thought that such a manœuvre will inevitably result in a tear of the perineal skin and other tissues. Strange to say, it does not do so; indeed, it frequently prevents such an accident, for it allows birth to occur with the least possible distension of the vulvar outlet.

I have practised this method of delivery on several occasions, and it has come to form part of my routine in these cases. It is simply wonderful how rapidly delivery can often be effected in this way and what real help it is to the patient.

Gordon-square, W.C.

A CASE OF ENDOTHELIOMA MYXOMATODES OF THE MAXILLARY ANTRUM.

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(*With a Pathological Note by* S. G. SHATTOCK, F.R.C.S. Eng., *Pathological Curator, Royal College of Surgeons of England.*)

THE clinical features of the case which forms the subject of this communication were so interesting and the pathological findings so extremely rare that they deserve being placed on record. With reference to the last point I am sure that no similar case has been recorded in any English journal, neither can I find any references to the disease in those standard French and German text-books devoted to diseases of the nose and its accessory cavities. On the other hand, I am quite convinced that in the month of October, 1907, I operated upon a precisely similar condition in so far as the patient's symptoms and the appearances and physical characteristics of the growth could be relied upon to establish the identity of the two cases. A histological examination of the tissue was made in this earlier case, but the report was so fragmentary that it would scarcely justify me at this juncture in recording more than the one and later example of endothelioma myxomatodes of the antrum.

History of case.—The patient, a married woman, was sent to me by her medical attendant on April 16th, 1909, complaining of "stuffiness of the left side of the nose with a slight mucopurulent discharge from the corresponding nostril and heavy colds in the head." These symptoms had been especially noticeable for the past four months. In a letter describing her symptoms in more detail the patient says: "For several years I have had bad headaches sometimes and always when tired, becoming more severe towards evening and lately most severe at night when they would awake me. I generally found a mustard plaster at the back of my neck and behind my left ear would give relief. My so-called headache affected the whole left side of my face, I had toothache, earache, and *severe* pain in my left eye. During a severe attack I could give my mind to nothing and sometimes felt something peculiar about the sight of my left eye, a sort of mistiness, and on about two occasions I seemed to see only about half an object; for example, in looking at the time I would only see three-quarters of the face of the clock."

On examination the left antrum was dark on transillumination, but neither in the canine fossa, over the left side of the hard palate, nor within the nasal cavity were there any very definite signs of distension of the antral cavity. Only in the left middle meatus and corresponding to the upper membranous portion of the inner antral wall I noticed a distinct fulness which offered slight resistance to the probe and gave much the same impression as would be derived from probing soft beeswax. I pierced this region and inserted a small spoon such as is used in aural work and withdrew upon it a very thick reddish-brown gummy substance such as I had only once before seen in this region, and this was in the earlier case already referred to. There were no polypi in the left nasal fossa, and beyond slight congestion in the middle meatal region and the fulness of its outer wall (*vide supra*) these regions presented no abnormality. The inner antral wall was now punctured by passing a Lichtwitz's trocar and cannula upwards, outwards, and backwards on the outer aspect of the inferior turbinal bone. On injecting warm boracic lotion a sense of resistance was felt, no fluid returned through the nostril, the patient experienced a sense of fulness in the cheek bone and the second upper left bicuspid, which was filled with an amalgam stopping, commenced to ache. Concluding that some unusual condition was present in the antrum I advised a thorough examination under general anæsthesia, and obtained the patient's consent to do what seemed best in any circumstances which might arise.

Under chloroform anæsthesia the left posterior naris was plugged with a small captive sponge, the anterior two-thirds of the inferior turbinal removed, and the canine fossa fully exposed through an incision in the gingivo-labial fold extending from the malar ridge to the canine root. The antrum was now opened through the canine fossa, a hole of the size of a sixpence being made. The sinus was seen to be fully occupied by a growth the surface of which was of a bluish-grey colour. There was no hæmorrhage from its surface nor was there any purulent or muco-purulent discharge in the antrum. On removing some of the growth with a ring curette it was found to consist of a semi-solid, reddish-brown, gummy substance—in fact, I can think of no better simile than that the antrum appeared to be filled with a huge raisin in which the "stones" were missing. It was quite easy to remove this substance, which could almost be shelled out, and the lining of antrum appeared to be little altered from its natural condition. A little general oozing of blood occurred and it was impossible to find any region from which the growth seemed to take its origin. The inner antral wall and the anterior ethmoidal cells were next removed through the opening in the canine fossa, the parts cleansed, and the bucco-antral wound sutured.

The patient left the nursing home at the end of a week, and has recently written to me saying: "The operation has greatly relieved the symptoms, I have no stuffiness now, and

[5] Einige Worte über den Dammschutz, Münchener Medicinische Wochenschrift, vol. lv., p. 524, March, 1907.

have only had one headache at all the same nature since then; it was not severe, but my left ear ached a little, and I had a dull humming in it for some time."

The naked-eye appearances and physical characteristics of the material which filled the antrum were so unusual that I forwarded it to Mr. S. G. Shattock who subjected it to an exhaustive examination and has furnished me with the appended detailed report. Under his direction Mr. Ford (38, Berners-street, W.) has made the accompanying drawing which illustrates a typical portion of the growth under high and low powers of the microscope.

Specimen of growth from antrum (hæmatoxylin and eosin). The upper portion was drawn under Zeiss, objective A, and the lower, showing a higher magnification of part of the same field, under objective D. The original drawing has been reduced to suit the breadth of the column, the magnification being in consequence somewhat diminished.

It would be interesting to know if such a condition has been met with by other surgeons, for I am convinced that my earlier case (October, 1907) was of the same nature. The patient's symptoms were almost identical except that her headaches were so constant and severe that her general health had been severely undermined and she looked so worn out and cachectic that one would not have been surprised to have discovered some advanced malignant disease or grave constitutional disorder.

The naked-eye appearances and the very sticky nature of the growth were identical in the two cases. In the first I obtained the following report from the pathologist: "The matrix of this tissue is composed of fibrous tissue which has undergone hyaline and granular degeneration. In the interstices of this necrobiotic tissue are seen scraps of infiltrated mucous membrane and bits of comparatively healthy fibrous tissue in which the nuclei of the individual fibres can still be seen."

The first patient has remained free from recurrence for two years and is now in perfect health, a consummation devoutly to be wished for in my second and more recent case.

PATHOLOGICAL REPORT BY MR. S. G. SHATTOCK.

The material consisted (in addition to two pieces of mucous membrane) of three somewhat voluminous masses, the largest about 2·5 centimetres in chief diameter and 1 centimetre in thickness, of soft mucinoid material, which rapidly swelled when immersed in water. It could be divided by the lightest pressure; the semi-transparent surface of the section so made was speckled with a more opaque, whitish substance, but presented no fibrous or other recognisable structure. The addition of acetic acid to a smear on a slide rendered it opaque from coagulation, the coagulum not dissolving in excess of the acid. The material readily hardened in formol and allowed of perfectly satisfactory study by means of frozen sections.

The sections were cut vertically to the free surface, and were stained, some with Ehrlich's hæmatoxylin; others with this followed by eosin; with carbol-thionine; and with Scharlach. The sections display groups of cells parted by an abundant mucinoid stroma, and often taking the form of long, slightly tortuous columns. The cells composing the groups are closely packed, and their nuclei of very diverse forms, distorted and flattened as though pressed out of shape by the swelling of the intervening stroma. There are no polymorphonuclear leucocytes or lymphocytes amongst or around them. The cytoplasm is distinctly visible in isolated cells, and in the carbol-thionine preparations stains slightly differently from the stroma. The cells are quite distinct from the other substance and take no part in its formation.

The general irregularity of form and the grouping of the cells, together with the manner in which the groups become attenuated and lost in the stroma (single, isolated cells of the same kind occurring in sparse numbers in the latter), recall the histological picture of certain types of endothelioma. There is nowhere any lumen to the groups. None of the "cancer bodies" present in carcinomata were found in any of the cells. The sections stained with Scharlach show that not a few of the cells contain moderate numbers of minute droplets of fat.

The stroma is everywhere in excessive bulk, and is either homogeneous or presents marks of fibrillation, with very few or no pertaining corpuscles. The substance in question has, it is clear, arisen from mucinoid degeneration, swelling and coalescence of the connective tissue fibres of a stroma between the cell groups; even where the fibrillation is most pronounced the individual fibres want the normal aspect and take an abnormal stain. In the preparations treated with hæmatoxylin the material is of different shades of violet, and so differs from normal fibre, which remains uncoloured. In the carbol-thionine preparations the material stains of a pale violet and pink, the two merging one into another; here and there it is traversed by a certain number of long twisted ribbon-like processes of a bright red colour, which from the way in which they follow all the windings of the circumjacent substance are evidently of the same kind, although the difference in colouration marks some slight difference in chemical composition.

A noteworthy feature in the degenerate stroma is the presence of long coarse crystals, tapering at the ends, and occurring singly or in bundles. In the carbol-thionine preparations these are stained of a pale sky blue; in the hæmatoxylin and eosin preparations they are of a pale orange; in the hæmatoxylin alone, they are uncoloured. That they are not due to the action of the reagents used is evident from the fact that in the material examined in the recent state the same crystals were present. In the microscopic sections, the crystals when cut transversely are regularly hexagonal, and this is equally true of those that are isolated and not subject to the lateral pressure due to their grouping. As to their nature, I have been unable to obtain information. They appear to be in some way connected with the degenerative process, and are described here rather for any future interest they may have than for any present.

The growth itself may be classified as an endothelioma of which the stroma has undergone mucinoid degeneration. An analogous condition is met with, though it is rare, in carcinomata. One such example only has come under my own observation. This was a carcinoma of the breast; the groups of epithelial cells retained their usual disposition, but the stroma was represented by a mucinoid material, staining violet in hæmatoxylin preparations, and arising from degeneration of the fibres of the stroma; the cells between the altered fibre persisted, some of them being branched, and so rendering the tissue mucous in character, although the mucinoid intercellular material arose from the degeneration and disappearance of the fibre. No crystals were present in the stroma. Such a change may be viewed indifferently as a mucinoid degeneration of connective tissue or as a metaplasia of common connective tissue into that known as mucous.

The term "Carcinoma myxomatodes" has already been applied to carcinomata of which the stroma consists of mucous tissue, and the same adjective may be used to cover the condition present in the tumour under consideration. The growth would be an Endothelioma myxomatodes. In the common endothelioma of the parotid gland the endothelial groups of cells lie partly in an open tissue of branching cells, but elsewhere in a hyaline matrix furnished with similar

branching cells, the two stromata being transformed one into another. But the gross physical characters of such tumours are not myxomatous or myxoma-like; they are not comparable to the endothelioma described in the present report, and they would not merit the same name.

THE FATE OF DAMAGED JOINTS:

A STUDY OF CASES OF INJURY, PRINCIPALLY FRACTURES, INVOLVING JOINTS TREATED IN THE MASSAGE DEPARTMENT OF THE LONDON HOSPITAL.

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ALTHOUGH belonging to the commonplace, injuries in the neighbourhood of, and directly or in course of treatment involving, joints provide a theme of no small interest both to the practitioner and to the patient. To the former they furnish a field for diagnosis, prognosis, and diversity of treatment; while to the latter the ultimate result is the all-important consideration. It is with the last point of view chiefly in mind that the material for the following paper has been collected, but in judging of result it has been attempted to ascertain what has been the influence of treatment for good or evil. Moreover, in these latter days, with the overcrowding which is becoming more acute, with the liability of employers for the compensation claims of their injured workmen, with the increasing struggle for existence of individuals, and with the constant, though often unseen, wrestling for supremacy with other nations, a knowledge of the ultimate fate of accident cases, of what use they are as citizens and breadwinners, and the reasons why they recover with greater or less rapidity is of more than common interest. It is of small value to know that a patient left hospital with "first intention scar," or "firm union, no shortening." Inquiry must be made about the later fate of such a patient, whether he can earn his living and in general behave as a normal citizen should do, some months or years after treatment has ceased. A knowledge of the ultimate condition of injuries and fractures and the length of time necessary for full recovery is the foundation of a sound prognosis, so necessary in compensation cases. Owing to the rapidity with which patients of the hospital class change their place of abode they are not always easy to trace, but of about 400 cases rather more than one-third have been seen or have sent reports of themselves from one to two years after the original injury, and of others there are notes of the progress after several months.

The views here set forward are based on a study of cases personally seen and supervised in the massage department of the London Hospital for the last two and a half years; the figures given are taken from a continuous series of nearly 400 cases taken for a period of about 18 months during that time. My thanks are due to the surgical staff of the London Hospital, under whom these cases have been previously in the wards and in the out-patient department, for their courtesy in allowing me to make use of their cases for this purpose.

Joints Considered.

There are six large joints in the limbs all of which are fairly frequently subjected to violence; of these the hip and the knee are not considered here for the following reasons. Injuries about the hip are usually found in old people, who, if the damage be sufficiently grave to be worthy of attention, are, as a rule, rapidly deported to infirmaries and are seldom seen in the out-patient department of a large hospital; consequently the numbers seen in our massage department were not enough to form any sort of series. Injuries about the knee consist chiefly of fractured patellæ and internal derangements of cartilages or synovial fringes; the main treatment is therefore operative, depending on the proper application of the Listerian method, though, nevertheless, movement and exercises play a most important part in the after-treatment. It is more fitting that the results should be described by those who have performed the operations. There remain to be considered the shoulder, elbow, wrist, and ankle. The treatment of injuries in these positions is usually by fixation of various kinds, massage, and movements, both active and passive. Interference by open operation is seldom required in these cases, though there can be no question that under certain conditions wiring, suturing, screwing, &c., of bone by the open method can be used to great advantage.

Varieties of Injuries.

The injuries coming under notice are fractures (including injuries to epiphyses) and dislocations; sprains form a small proportion of the cases treated. Of fractures those only are taken which are found within about two inches of a joint. This is, perhaps, an arbitrary line of distinction to take, because really all fractures of long bones involve the neighbouring joints, if not at the time of injury, at any rate during, and unfortunately sometimes owing to, treatment, as is shown by the number of stiff knees after fracture in the middle of the femur and stiff ankles after fracture of the middle of the tibia. In a practical survey of the results of fractures it is the joints which are to be considered, for the joints, and not the bones, are the units of function.

General Considerations regarding Fractures.

The ultimate goal to be attained in these cases is the restoration of function—i.e., the limb must be able to work. It must never be forgotten that bone is not the only tissue involved in fractures, or, indeed, the most important in a considerable number of cases. Few fractures, particularly in the vicinity of joints, are perfectly simple, but all the neighbouring tissues, muscles, tendons, vessels, nerves, and joints participitate more or less in the catastrophe, and to each of these due attention must be paid. The relative importance of each component part of the limb must be respected in treatment. By regarding the limb as a whole, and by treating it as such and not merely looking after the broken bone, we shall obtain the best results most rapidly. A patient will not feel very grateful for having the bones of his limb restored to the symmetry of an Apollo Belvedere if at the same time the joints, tendons, and muscles around are affected with the same statuesque rigidity.

It is not altogether easy to define when function is properly restored; one is often surprised by the inability to perform heavy work on the part of a patient whose limb on examination appears to have complete mobility and strength. Malingering is often suspected and sometimes rightly, but the fact must not be lost to view that in many walks of life a fitness and efficiency are required such as is possessed by a trained athlete. We all are aware what a comparatively slight strain of muscle or joint will put us completely off our stroke at any game, so it is not difficult to believe that men whose business it is to climb unstable ladders, sling about hundredweight bales, or get around amongst whirling machinery may be incapacitated by small defects of which there are no signs in the consulting-room. In addition to these, cases of clear functional or hysterical disability turn up from time to time.

Fixation versus *Movement.*

In the management of fractures, particularly those near joints, two apparently opposing principles of treatment present themselves, fixation and movement. The former includes splinting, strapping, bandaging, and operation; the latter massage, passive manipulation, and active movements. The former, i.e., fixation, stands for apposition of the ends of the fragments and maintenance of good position; the latter for free circulation of blood and lymph, mobility of joints and tendons, quick return of muscular power, and, finally, more rapid union of bone, provided that movement be not of such a nature as will cause displacement and prevent union. Slight movement between the fractured ends is of not the least harm, indeed may be beneficial after the first few days; before that it may increase hæmorrhage, exudation, and clot between the ends of the fragments; but movement must on no account be enough to cause displacement of the fragments, unless in a direction to improve their position. Movement and displacement of the fragments are very different things and must be carefully distinguished. The question often arises in treatment as to whether the bone or the parts about it are the more important. This depends on the power of repair of the patient, a property which diminishes with the age of the patient and the ageing of his blood and lymph vessels. Beyond a certain age, which varies greatly in different patients, but which may roughly be put at from 40 to 50, the tendency to thrombosis,

œdema, osteo-arthritis, and adhesions in joints and tendon sheaths very rapidly increases. Therefore in persons of advancing years it is necessary to look to the functions of joints, tendons, muscles, nerves, and vessels rather than to an exact return of the bone to its anatomical structure and shape. We may safely put up in plaster the joint of a child for months, and yet speedily reproduce a moveable joint, as is well seen in the treatment of tubercular joints and congenitally displaced hips; but if we fix the joints of men of 40 and upwards even for a week we run a grave risk of producing a fixity and rigidity which will take months to recover and may result in permanent disablement; all the more is this the case where the joint has been previously injured.

In the leg, again, restoration of the anatomical shape of the bones is more important than in the arm, since a shortened leg means some degree of limping. At the same time there is no doubt that more patients limp, and limp more grievously, from stiff ankles than from shortened legs. Unless the amount of shortening be gross, such as an inch or more, the effect of shortening on the gait is but trifling.

Far more important than shortening is a deficient restoration of the axis of the limb, or allowing the fragments to form a kink; owing to this, the strain of the body weight, &c., is not applied in the proper direction, and such conditions as flat-foot, knock-knee, and bow-leg arise.

Fixity of the ends of fragments does not tend to make them unite, often the contrary results, as the efforts to keep them still with splints, strapping, &c., cause their nutrition to be so impaired from deficient blood and lymph supply that union is slow; whereas in cases of delayed union repair is found to be greatly accelerated by the more vigorous sorts of massage—e.g., deep kneading (*pétrissage*), hacking, and clapping—in the course of which slight movement of the ends of the fragments is inevitable.

The use of splints, strapping, bandages, wires, bolts, and bars, is to produce apposition of the fragments and not rigid fixation, which is unnecessary. In cases where good apposition of the fragments cannot be attained without undue pressure from splints, bandages, &c., it is best to have recourse to open operation and the various methods of bone suture, screwing, &c., as is well shown by the good results of fractured patella, spinal fractures, and so forth. Except in certain situations, however, open operation is seldom necessary. Taking now the special regions involved:—

The Ankle.

Under this heading are classed sprained ankle, fractured lower end of the fibula, Pott's and Dupuytren's fracture, fractured internal malleolus, and separated epiphyses. There is a class of case closely allied to this group to which brief allusion may be made—viz., cases of stiff ankle with foot-drop and contracted tendo Achillis following on fractures of the tibia and fibula in their middle and lower third. These cases result from failure to keep the foot at right angles, or, in other words, from a slipping up of the heel, with the leg put up on the L-shaped back and side splints. This is an important reason for taking down and inspecting these fractures frequently, moving the ankle-joint and seeing that the foot remains in proper position. This trouble is, I am sorry to say, not uncommon, and is the chief source of disability in fractures of the tibia and fibula.

Of cases more immediately involving the ankle, the commonest group attending our department consists of Pott's fractures—i.e., a fracture of the lower part of the fibula with dislocation of the ankle, associated with fracture of the external malleolus or rupture of the external lateral ligament. The injury is usually due to a wrenching of the foot outwards, rarely by a wrenching inwards; of 37 cases only three showed inward displacement. In practice one sees every grade of damage caused by eversion of the foot, which may be arranged in the following order: 1. Fractured fibula about three inches from the lower end. 2. Stretching and tearing of the external lateral ligament, a form of sprained ankle, liable to end in flat-foot. 3. Fractured internal malleolus. 4. A combination of 1 and 2 or 1 and 3—i.e., fractured fibula with dislocation of the ankle or Pott's fracture. 5. The same as 4, but with marked displacement of the foot backwards due to rupture of the anterior and posterior ligaments of the ankle-joint, with displacement of the anterior tendons and rupture of their tendon sheaths. This is a severer variety of Pott's fracture. 6. Dupuytren's fracture in which in addition to the damage of 4 or 5, the lower end of the fibula is torn from its attachment to the tibia with great widening of the ankle. Of these, the last is quite rare, fracture of the internal malleolus alone not very common; the others are everyday cases. My impression is that rupture of the internal lateral ligament in Pott's fracture is more commonly found than fracture of the internal malleolus, though the latter condition is fairly common.

It is stated that Pott's fractures are frequently compound. I have not found this to be the case; only one case of compound fracture occurs in the present series, and this is in accord with my experience of a large number of Pott's fractures seen at the London and Poplar Hospitals. Compound fractures of the tibia, about the middle, are far more common. Perhaps the present infrequency of compound fractures of the ankle is the result of the teaching of more enlightened first aid to the public, for one sees a good many fractures about the ankle which are nearly compound and which, with rough or bungling manipulation, might easily become so. The condition (5)—i.e., Pott's fracture, with marked backward displacement of the foot—is not common; it does not occur in more than one or two cases out of ten Pott's fractures. The ligaments and tendon sheaths torn in this condition I have ascertained from some experiments with cadavers. It is fortunate that this backward displacement is uncommon, for when present it is apt to be overlooked, especially when there is much swelling of the ankle—a condition, again, likely to obtain owing to the greater violence necessary to produce the rupture of ligaments in consequence of which the displacement occurs. In such a case it is often extremely difficult to make out the position of the foot with regard to the ankle; it is only by realising how much the heel normally projects backwards that it is possible to estimate backward displacement and by comparing with the sound side. X rays will, of course, make the matter clear, but they cannot always be obtained. With practice the eye is the best guide, and excessive projection backwards of the heel can be recognised at once, and it is most necessary so to do, for if not corrected there will be later greatly impaired dorsiflexion of the foot—i.e., partial equinus—with all the accompanying disability from bent-kneed progression, shortened stride, and limping.

As to results, the following classes have been made: (*a*) Very good, when the patient can walk any distance and do a hard day's work—e.g., as engine-driver, carman, stevedore, &c.—whether the ankle appears anatomically perfect or not. As a matter of fact, few of the cases showed no signs of the fracture afterwards. (*b*) Good, when the patient can walk and work well, but with a slight limp of weakness. (*c*) Fair, when the patient can walk but tires early. (*d*) Bad, when the patient can only limp a few hundred yards.

Pott's fracture.—Of recent Pott's fracture 34 came under observation and treatment; of these, two were lost sight of too soon to be of any value. Put in a tabular form, with the number of months after injury the cases were followed, the results are:—

	Seen after 2-3 months.	4-6 months.	6-9 months.	18-24 months.	Total.
Very good ...	—	1	—	7	= 8
Good	6	3	1	3	= 13
Fair	5	4	—	1	= 10
Bad	—	—	—	1	= 1

That is to say, two-thirds of the cases terminated favourably and were good working results. Of the cases labelled "fair," some probably later would, if it were possible to trace them, be found to be good, as is shown by the small number of cases called "fair" amongst those seen after a considerable time. On the other hand, some of those which appeared fair results after two to three months may have degenerated later into "bad." Three cases of Pott's fracture with inversion of the foot occurred in the series; all did well. Five cases of Pott's fracture of old standing came under notice. Of these, one of two years' standing improved in five months but was not a good result; the patient was unable to do a full day's work. A second case seen three and a half months after the accident was treated three months and could walk very fairly at the end of that time; the other three cases left off too soon to be of any value.

Length of treatment.—The length of time these cases remained under treatment was considerable, varying from three to seven months after the accident, the average time

being three to three and a half months. The results, however, in the cases where treatment was prolonged were good.

The following conditions were found to increase the length of treatment necessary: 1. Œdema of the ankle and leg, which occurred to a marked degree in five of the cases where treatment was of long duration, and is one of the most troublesome things in fractures about the ankle; it is, no doubt, due to thrombosis of veins and lymphatics of varying extent, and its frequent occurrence and great persistence is a plea for early massage in these cases. 2. Long splinting, a probable cause in three cases. 3. Severity of the original injury, in one case a Dupuytren's fracture and in another very bad backward displacement of the foot, both of which imply a greater degree of violence and consequent damage to soft parts with a correspondingly longer period of convalescence. 4. Compound fracture. 5. Debility, in a patient who died a few months later from phthisis. The case which ended quite badly was rather old (60 years) and developed bad osteo-arthritis of the ankle and flat-foot. Similar changes to a less extent developed in some of the cases of which the termination was fair.

Fractured fibula.—Of fracture of the lower end of the fibula 17 cases were treated, of which one was lost sight of too early to be of value; tabulated, as in the case of Pott's fractures, the results are as follows:—

Seen after	2–3 months	4–6 months	12–24 months	Total
Very good	1	—	6	= 7
Good	2	4	—	= 6
Fair	1	2	—	= 3

The length of treatment varied from five to 12 weeks, the average length being six weeks. As might be expected, the results are better and the treatment shorter here than in Pott's fractures. In the cases which required the longer treatment there was some damage to the internal lateral ligament, although not sufficient to constitute a Pott's fracture.

Fracture of internal malleolus.—Three cases of fracture of the internal malleolus alone occurred, and of these two were good results when seen three and 20 months later respectively; one case was not traced. The length of treatment of these cases varied from six to 12 weeks.

Sprained ankle.—Of nine cases of sprained ankle five were perfect results; four were only fair, the patients being troubled with varying degrees of flat-foot. Treatment was, as a rule, only necessary for a month or less; in a few cases several months' treatment were necessary, in one case as much as five.

Taking the results as a whole, they are very fair, but the time expended in treatment was considerable; the greater the damage to the soft parts the longer was it necessary to continue treatment. At any rate, this is a less gloomy picture than that given by some writers on this subject; one reads, for instance, that cases of Pott's fracture lose 75 per cent. of their working value, or that satisfactory recovery from Pott's fracture is almost unknown. A great deal depends on the way in which they are treated.

Treatment.—The treatment of the cases quoted here varied at the commencement according to the views of the house surgeon. As a rule, for Pott's fracture, fractured internal malleolus, and fractured fibula, splints were used for two to four weeks with or without early massage. The splints used were either the L-shaped back and side splints or the external L-shaped splint, as will be described later. In a few cases plaster bandages were applied for some weeks before massage and movement were used; it is noteworthy how much longer treatment these cases required, yet in the end with perseverance and unflinching toil the results even here were not to be despised. As a rule, after three to four weeks in splints the cases were sent out in a divided, removeable plaster (Croft's), and massage and movements instituted.

The following method we have found most serviceable in Pott's fractures, fractures of the internal malleolus, and some cases of fractures of the lower end of the fibula where there is reason to think that the internal lateral ligament has been strained, and is the method which has been in use at Poplar Hospital for some years. Bearing in mind the troubles which arise from imperfectly conducted treatment—viz., everted, splay or flat-foot and equinus, or both—the foot must be put up in a position of inversion, of dorsiflexion to a right angle, and without backward displacement. An anæsthetic may occasionally be necessary, especially in the variety with displacement backward. The splint which best answers this purpose is the L-shaped external splint with a foot-piece, known to us as a Sharpe's splint, but described in some books as a Roughton; the latter in our nomenclature consists of a Sharpe's splint with a small projecting back-piece behind the heel to prevent backward displacement of the foot. We find a small separate splint about eight inches long equally efficacious in preventing this displacement. The following are the points in applying the splint. 1. A good pad should be placed under the outer side of the foot between the latter and the splint and below the external malleolus; this pad inverts the foot and at the same time protects the internal malleolus from pressure. 2. The knee must be very acutely flexed; as a rule in pictures of this sort of splint the knee is represented as only slightly flexed. To act properly the thigh should be flexed on the belly and the leg on the thigh, thus relaxing as far as possible the tendo Achillis and greatly obviating any tendency to drawing back the foot and plantar flexion of the ankle. 3. The bandage is arranged as follows: it is pinned to the hinder edge of the splint before the leg is placed in position behind the ankle; it is then brought forward under the ankle between the latter and the splint and back again over the ankle and the small, separate posterior splint and so round the whole splint and down over the foot and foot-piece. This arrangement pulls the tibia back and pushes the heel forward and usually suffices to keep the foot in good position. Should this plan fail, it will be better to have recourse to tenotomy of the tendo Achillis to relax its pull on the heel rather than use strapping.

No doubt good position can in many cases be attained with the ordinary L-shaped back and side splints, but only if there is no backward displacement; moreover, with back and side splints there is a greater tendency for the heel to slip up, producing equinus, and there is nothing to produce inversion of the foot. Another great benefit of this splint is that massage may be used early without displacing the limb or the splint. Having now got the foot in good or even over-corrected position the rest of the treatment consists of massage followed in turn by passive and finally active movement. Massage may commence as early as the third day, dependent on the liability to displacement and the skill of the masseur. If there is any doubt on the latter point the surgeon had better see to the massage and movement himself, or if time does not permit of this wait a week or ten days before allowing the masseur to perform; this will mean somewhat longer treatment. A skilled masseur should, however, know when the fracture is in good position and how to counteract any tendency to displacement, and if he can deal with the case from the start treatment will be shortened. For the first few days he will confine himself to stroking upward (*effleurage*) the foot, ankle, and calf to remove blood clot and exudate from the tissues, and will move the toes without removing the limb from the splint, an easy matter on a Sharpe's splint; after from seven to ten days gentle movement of the ankle may be instituted, taking care that the direction is such as corrects deformity—viz., dorsiflexion and inversion of the foot, at the same time the calf muscles may be more vigorously massaged (*pétrissage*). After three weeks the foot may be placed in good position in a divided plaster and treated with massage and movements as an out-patient. The patient should be able, as a rule, to put the foot to the ground in six weeks, but old people and bad fractures, with much bruising and œdema, must not put weight on the foot for much longer. Each case must be judged on its merits. Placing weight on the foot too early will certainly lead to flat foot; it is better to wait too long than not long enough. For a week or two before the foot is placed on the ground active exercises can be practised; these consist of flexion and extension of the ankle and toes, together with a rotary inversion of the foot. When the foot is placed to the ground the same exercises are continued, the patient rising on the toes and heels alternately, with gradually increasing weight on the foot. At this juncture it is important to attend to the gait of the patient; most patients of the hospital class walk naturally with the foot splayed out to some degree; after an injury to the ankle this fault is exaggerated, especially if the dorsiflexion of the foot be impaired.

We must teach them to walk with the toes pointing straight forward, and to help with this a very good exercise

consists of walking with the toes turned in as far as possible, taking very short steps, a favourite exercise for flat-foot cases. With such exercises a well-set case will soon walk well and powerfully. Unfortunately, many cases came under notice two or three weeks after the accident in which the position is not all that could be desired; there is outward displacement, outward splaying, and impaired dorsiflexion, separate or combined, and in varying degrees. Here the treatment is similar but prolonged, much passive movement in the direction of dorsiflexion and inversion being necessary. Still more important are the active movements of the same nature.

In some rebellious cases skipping was adopted with moderate success, but it was found that, although useful in some cases of early flat-foot, yet in these cases of fracture the slower movements, such as rising on the toes and heels, were more beneficial, and that if a patient could skip he was, as a rule, able to follow his ordinary avocation.

The treatment of the other injuries about the ankle should be conducted on the same lines, but as a rule the foot can be placed to the ground much earlier. Where there is certainly no displacement no splint is required; when in doubt it is best to splint in the manner described, because the troubles of ankle cases are always in relation to the conditions of splay-foot and equinus.

A type of sprained ankle is sometimes met with which may be regarded as a potential Pott's fracture—i.e., although the fibula is unbroken yet the internal lateral ligament is damaged to such an extent that it will stretch if weight be placed on the foot too early, causing flat-foot. Similarly in cases of fractured fibula the same structure may be so damaged that, although there is no displacement at first, it will give way when walking is commenced, having then the typical appearance of a badly set Pott's fracture. Great care is necessary to avoid falling into this trap. The question of instrumental support may arise and if adopted should be used early; cases which are not in the best position would doubtless be improved by a walking instrument double to the knee with a valgus strap and possibly a toe-raising spring. In cases which are not progressing favourably the timely expenditure of two or three guineas early might well save the continuous drain of charity doles in later days.

(To be continued.)

PULMONARY TUBERCULOSIS TREATED BY DEEP MUSCULAR INJECTION OF MERCURIC SUCCINIMIDE.

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THE employment of mercurial preparations for the treatment of consumptives is no new departure. When one of us (J. E. S.) received his first appointment as assistant physician to the Mount Vernon Hospital 25 years ago all the patients of his predecessor in the out-patient department were treated with mercury, usually in the form of the perchloride. In more recent years the treatment of pulmonary tuberculosis with mercury has been given up, the success obtained being hardly sufficient to counteract the disadvantages attending a prolonged course of mercury administered by the mouth.

A medical officer of the United States Navy (Surgeon Barton Lisle Wright [1]), having observed that the administration of mercury to syphilitics with tuberculosis of the lungs resulted in a marked improvement in the pulmonary lesion, employed this remedy in cases of consumption in non-syphilitic individuals with results which were decidedly encouraging. He administered the mercury by deep muscular injections of "tabloid" hypodermic mercury succinimide (gr. 1-5th) and found that both the local and the general conditions materially improved. Messrs. Burroughs and Wellcome kindly placed at our disposal a supply of these tabloids for the purpose of a further trial, the main objects in view being to see if the favourable report of the former trials were corroborated and to determine if possible how long treatment must be continued in order to effect a cure. It should be noted that in all cases the administration of the drug is ancillary to the hygienic or sanatorium treatment, and that it is not possible to decide to what extent any improvement observed may be attributed to the effects of the injections. Nevertheless, in certain of our cases which had been for some time under treatment before the mercury injections were commenced improvement was certainly more marked and more rapid when the mercury was given than it had previously been. Though we have experienced none of the startling results reported from America the results of the injections are sufficiently encouraging to justify further and more extended trials with this remedy. We are, however, unable to give any decided answer to the second subject of inquiry, as to the length of time the treatment must be continued in order to effect a cure, if cure can be brought about. Our trial of the remedy has extended over a period of four months and it would be at least premature to say that any of the cases are cured. We selected for trial cases in various stages of the disease in the lung and a few cases in which there was tuberculosis in the larynx or other parts as well as in the lungs.

The method of treatment recommended by Dr. Wright is as follows:—

"Tabloid" hypodermic mercury succinimide gr. 1-5 No. 98 is the product used and one may be dissolved in 10 m. of sterile water, contained in the barrel of a B. W. & Co. all-glass aseptic syringe. The injection is made into the gluteal muscle under the usual aseptic precautions. The needle is driven deeply into the muscle by a quick, downward plunge. If no blood escapes from the butt of the needle the syringe is put in place and the drug injected. If blood escapes a vein has been punctured and the needle is therefore withdrawn and inserted at another place.

The treatment is started with one injection gr. 1-5 every other day until 30 injections have been given. This is followed by a two weeks' course of potassium iodide, e.g., "Tabloid" potassium iodide gr. 5, two to be taken dissolved in a large wine-glass of water thrice daily. Then one week's rest from medication, after which the injections are resumed, and so on.

This treatment was undertaken in 14 cases but after two injections one case had to be abandoned. After the first injection the patient complained of such violent pain down the leg that one was almost led to believe that the sheath of the sciatic nerve had been penetrated, but on a subsequent occasion the other buttock was merely pricked with an ordinary sterile needle when the patient complained of the same violent pain. No further treatment was attempted in his case.

Of the 13 patients who were treated some for various reasons—wishing to return to work, domestic trouble, having to undergo a surgical operation, &c.—were not able to remain as long in hospital as one could have wished in order to give it a fair trial. The buttock was chosen as the most convenient place for injection, and, of course, every precaution was taken to sterilise both the needle and the part injected. For each injection 1-5th grain was dissolved in 10 minims of distilled water; this was injected into alternate buttock every second day, Sunday being excluded. In the case of the females no injection was given during the menstrual period. In all cases careful attention was paid to the teeth and a mouth-wash was used after each meal.

While none of the patients objected to the form of treatment it cannot be said that any of them liked it. With few exceptions there was always a brawny lump, varying from the size of the tip of one's little finger to the size of one's thumb or a little larger at the seat of injection for about 48 hours. On one occasion a lump arose in about half an hour almost the size of one's closed fist; the same evening it was about half that size, and next morning it had almost disappeared.

All the patients complained of a slight burning or pricking pain at the seat of injection for a time, varying from 6 to 12 hours. This was more noticeable when the injections were first commenced, and later the patients complained less of it. Three of the patients felt faint after the injection on three or four occasions and one of them had a slight vomiting attack immediately after. The female patients complained less of the pain than the males. This may be explained by

[1] The Treatment of Tuberculosis by the Administration of Mercury. Washington Government Printing Office, 1908, and New York Medical Journal, August 29th, 1908.

Table giving Particulars of 13 Cases of Pulmonary Tuberculosis treated by Deep Muscular Injections of Mercuric Succinimide.

Sex and age; duration of illness.	Physical signs.		Temperature and pulse.		Weight.		Tubercle bacilli.		General condition on discharge.	Duration of treatment.	Remarks.
	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.			
F., 35; 10 years.	Crepitations not very moist, all over right side.	Crepitations only apex lower lobe, right side.	97°–102° M. 72 E. 104	97°–98·4° M. 72 E. 90	st. lb. oz. 9 4 8	st. lb. oz. 10 2 0	+	+ Decreased.	Satisfactory.	4 weeks.	Chronic; arrested.
F., 51; 11 months.	Crepitations not very moist in right upper lobe and left apex + cavity.	Dry crepitations, apex right lower lobe.	98°–99·8° M. 80 E. 94	98°–100° M. 64 E. 96	8 2 0	8 7 0	+	+ Much decreased.	Fairly satisfactory.	7 ,,	Acute; arrested, and then lighting up again.
F., 20; 9 months.	Moist crepitations over left upper lobe and right apex.	Moist crepitations left apex.	97°–98·2° M. 68 E. 88	97°–98° M. 76 E. 90	8 11 0	9 6 0	+	+ Increased.	Satisfactory.	7 ,,	Acute; almost arrested.
F., 28; 2 years.	Crepitations moist, right upper lobe + cavity.	Few crepitations, back right apex.	97·6°–100·2° M. 84 E. 104	98°–99·4° M. 96 E. 100	7 9 2	8 6 8	+	+ Less.	Satisfactory.	6 ,,	Arrested.
F., 23; 4 years.	Fairly dry crepitations over both apices.	Fairly dry crepitations over both apices.	97·8°–98·2° M. 78 E. 88	97·4°–98·2° M. 76 E. 88	7 7 6	7 12 0	+	+ Less.	Satisfactory.	8 ,,	Chronic; arrested.
M., 39; 3 years.	Moist crepitations, right base, with rhonchi all over.	Nil.	97°–98·4°	97°–98°	9 5 0	10 7 0	+	—	Satisfactory.	8 ,,	Arrest.
M., 21; 2 years.	Dry crepitations over left upper lobe.	Nil.	97°–98°	97°–98·4°	9 6 8	10 9 8	+	+ Much less.	Satisfactory.	4 ,,	More or less chronic; arrested.
M., 30; 7 years.	Crepitations moist at apex, all over right side; crepitations left apex.	Dry crepitations, left base.	96·6–98·4° M. 72 E. 98	97°–98·4° M. 68 E. 92	9 7 8	9 12 4	+	+ No change.	Fairly satisfactory	8 ,,	Chronic and inactive.
M., 15; 4 months.	Moist crepitations all over left side.	Few dry crepitations left apex.	97°–102° M 80 E. 96	97°–98° M. 76 E. 92	7 8 0	9 0 0	+	+ Less.	Satisfactory	7 ,,	Acute; arrested.
M., 16; 18 months.	Crepitations over right upper lobe + cavity.	Few dry crepitations over right apex; few left base.	97°–99·° M. 72 E. 100	97°–99° M. 80 E. 96	6 10 8	7 9 0	+	+ No change.	Fairly satisfactory.	8 ,,	—
F., 17; 3 months.	Moist crepitations all over left side and right apex.	Fewer and drier crepitations over same area.	97·4°–101·8° M. 92 E. 122	97·8°–99·4° M. 96 E. 112	7 6 0	7 7 0	+	+	Bad.	5 ,,	—
M., 31; 5 years.*	Crepitations all over right side.	Crepitations more, and these all over right side.	97°–101° M. 72 E. 100	97°–100° M. 72 E. 108	9 1 12	9 3 0	+	+	Worse.	5 ,,	Left for surgical operation.
M., 29; 2½ years.	Moist crepitations over left upper lobe; few moist crepitations + cavity right upper lobe.	Crepitations all over left side and right upper lobe.	97°–101° M. 92 E. 108	97°–101·2° M. 90 E. 100	8 12 8	Not known.	+	–	Worse.	5 ,,	Tuberculous laryngitis.

* Lung trouble. Hip-joint disease three years old. Knee-joint disease five years. Leg amputated then.

the fact that nature has provided them with more adipose tissue in that region and therefore sitting down would cause less discomfort.

The patients treated—six females and seven males—varied in age from 15 to 51 years; all, with one exception, were more or less advanced cases, three having cavities and all had tubercle bacilli in the sputum.

In one case it was noticed that the sputum was swarming with bacilli on the first examination. About ten days later they were decreased by half, and in another week one had to look carefully for them, there were so few. In another case, though the physical signs decreased the bacilli increased. In most of the remaining cases the bacilli decreased, and in one case none could be found after a couple of weeks' treatment.

A remarkable fact which applied to most of the cases was the rapidity with which the physical signs decreased. This continued for the first four or five weeks. Then, with two exceptions, most of the patients arrived at a stage where no further change could be made out, and some of them even returned to their former condition. In two cases the physical signs disappeared altogether.

THE SEWERAGE OF BUDE (CORNWALL).—The Bude sewerage works, which have been erected at a cost of £14,000, were formally opened on July 1st by Mr. A. C. Thynne, in the presence of a large gathering.

LITERARY INTELLIGENCE.—Mr. H. K. Lewis has purchased the remainder of the stock of the New Sydenham Society's publications, comprising the collection of volumes on medicine and surgery, the "Pathological Atlas," the "Lexicon of Medical Terms," and the "Atlas of Clinical Medicine, Surgery, and Pathology," issued by the society during the years 1859–1907. Many of the works were of a pioneer character when issued by the society and have since acquired a historic importance. The number of copies of each book has been of necessity limited on account of the heavy expense of warehousing a larger stock, and of many of the volumes only a small number remained over.

NOTES ON THE USE OF X RAYS IN THE TREATMENT OF MALIGNANT DISEASE.

BY C. E. IREDELL, M.D. LOND., M.R.C.P. LOND.,
SURGEON IN CHARGE OF THE ACTINO-THERAPEUTIC DEPARTMENT OF GUY'S HOSPITAL.

THOUGH the X ray treatment of rodent ulcer is now so successful that it will probably become the routine method of dealing with that disease, it is less generally recognised that in other forms of malignant disease X rays have in some cases a certain definite value.

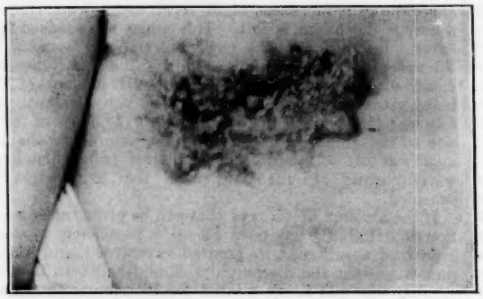
During 12 months beginning in March, 1907, 31 cases of malignant disease, excluding rodent ulcer, have been treated with the X rays at Guy's Hospital. These cases are here recorded with a view to showing the uses of this form of treatment. Of these cases 23 were inoperable, the remaining eight having been sent immediately after operation for X ray treatment in order to prevent recurrence. The effect of treatment most frequently observed in the inoperable cases was the relief of pain. In 13 cases this relief was well marked, and it extended over weeks or months, and where tenderness was present this also subsided at the same time. The pain, which was variously described as "pricking and shooting" or "dull and aching," was relieved in all three forms of malignant disease, the relief being more complete but of shorter duration in the more rapidly growing tumours. Except for this difference, growths which were dissimilar microscopically seemed to respond to treatment in the same way. After a single treatment to a tumour in which there is pain it becomes easier within 24 hours and remains so for a few days, the length of time depending on the amount of X rays given. It then returns if the treatment is not repeated and gradually reaches its former intensity. If the pain is so severe as to keep the patient awake at night sleep becomes possible after treatment.

The relief of pain is followed by the diminution in size, and in some cases the disappearance, of the tumours. Malignant glands in the neck and axilla, subcutaneous nodules in the skin, and in one case a secondary deposit in the sternum two inches in diameter cleared up. In malignant ulcers the relief of pain is followed by a diminution of the discharge; if offensive, it loses its foul smell, and finally the ulcer may heal. Ulceration was present in seven cases and in six some improvement was obtained. Figs. 1 and 2 show the improvement in Case 2 at an interval of two months, and two months later the patient was almost well. Unfortunately no photograph was taken then, and while away on a holiday death from lobar pneumonia occurred.

In Case 10 there were two large fungating masses on the inner aspects of the buttocks, and there was a discharge which was so offensive that it was necessary to burn fumigating pastilles in the ward while the patient was being treated. After a few weeks of treatment the discharge became much less and lost all its offensiveness, and the fungations became smaller and cleaner. In Case 28 the discharge was so offensive that it was noticeable to anyone entering the room in which the patient was while the dressings were still on, and so profuse that though thick dressings were changed four times a day it always soaked through to her clothes. It soon lost its offensiveness and became less, and at the present time the ulcer has to be dressed only twice a day.

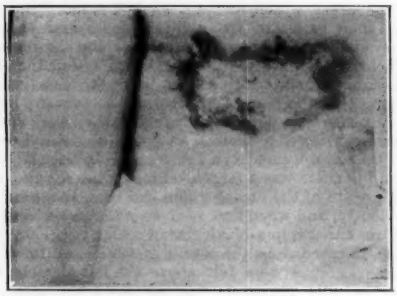
The local improvement is associated with an improvement in the general health of the patient, as shown by the fact that the appetite improves and that patients look and feel better. This improvement may be due to the relief of pain, the increased amount of sleep, the drying up of an offensive discharge, or the mental impression produced on the patient by the use of the complicated apparatus with the noise and sparking which are unavoidable in X ray work. Though one or more of these factors may be sufficient to account for the general improvement in some cases, in others they seem inadequate. In both there were cachexia, loss of appetite, and daily vomiting. No ulceration was present and pain was absent in Case 18. After the first treatment the vomiting

FIG. 1.



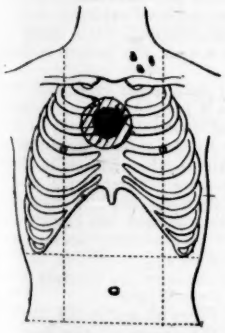
Case 2, atrophic scirrhus of the breast, March, 1907.

FIG. 2.



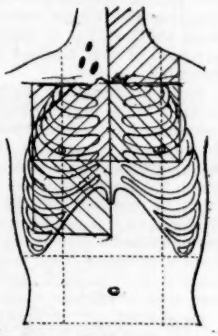
Case 2, May, 1907.

FIG. 3.



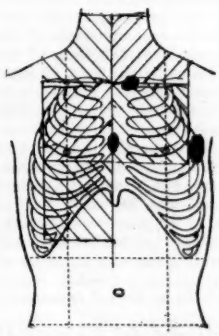
Case 3, sarcoma of breast.

FIG. 4.



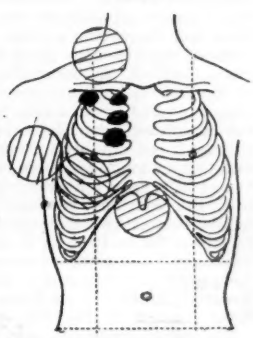
Case 3 three months later.

FIG. 5.



Case 3 eight months later than Fig. 3.

FIG. 6.



Case 17.

Table giving Particulars of 13 Cases of Pulmonary Tuberculosis treated by Deep Muscular Injections of Mercuric Succinimid.

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	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.			
F., 35; 10 years.	Crepitations not very moist, all over right side.	Crepitations only apex lower lobe, right side.	97°–102° M. 72 E. 104	97°–98·4° M. 72 E. 90	st. lb. oz. 9 4 8	st. lb. oz. 10 2 0	+	+ Decreased.	Satisfactory.	4 weeks.	Chronic; arrested.
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F., 23; 4 years.	Fairly dry crepitations over both apices.	Fairly dry crepitations over both apices.	97·8°–98·2° M. 78 E. 88	97·4°–98·2° M. 76 E. 88	7 7 6	7 12 0	+	+ Less.	Satisfactory.	8 ,,	Chronic; arrested.
M., 39; 3 years.	Moist crepitations, right base, with rhonchi all over.	Nil.	97°–98·4°	97°–98°	9 5 0	10 7 0	+	—	Satisfactory.	8 ,,	Arrest.
M., 21; 2 years.	Dry crepitations over left upper lobe.	Nil.	97°–98°	97°–98·4°	9 6 8	10 9 8	+	+ Much less.	Satisfactory.	4 ,,	More or less chronic; arrested.
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M., 15; 4 months.	Moist crepitations all over left side.	Few dry crepitations left apex.	97°–102° M. 80 E. 96	97°–98° M. 76 E. 92	7 8 0	9 0 0	+	+ Less.	Satisfactory	7 ,,	Acute; arrested.
M., 16; 18 months.	Crepitations over right upper lobe + cavity.	Few dry crepitations over right apex; few left base.	97°–99·0° M. 72 E. 100	97°–99° M. 80 E. 96	6 10 8	7 9 0	+	+ No change.	Fairly satisfactory.	8 ,,	—
F., 17; 3 months.	Moist crepitations all over left side and right apex.	Fewer and drier crepitations over same area.	97·4°–101·8° M. 92 E. 122	97·8°–99·4° M. 96 E. 112	7 6 0	7 7 0	+	+	Bad.	5 ,,	—
M., 31; 5 years.*	Crepitations all over right side.	Crepitations more, and these all over right side.	97°–101° M. 72 E. 100	97°–100° M. 72 E. 108	9 1 12	9 3 0	+	+	Worse.	5 ,,	Left for surgical operation.
M., 29; 2½ years.	Moist crepitations over left upper lobe; few moist crepitations + cavity right upper lobe.	Crepitations all over left side and right upper lobe.	97°–101° M. 92 E. 108	97°–101·2° M. 90 E. 100	8 12 8	Not known.	+	–	Worse.	5 ,,	Tuberculous laryngitis.

* Lung trouble. Hip-joint disease three years old. Knee-joint disease five years. Leg amputated then.

the fact that nature has provided them with more adipose tissue in that region and therefore sitting down would cause less discomfort.

The patients treated—six females and seven males—varied in age from 15 to 51 years; all, with one exception, were more or less advanced cases, three having cavities and all had tubercle bacilli in the sputum.

In one case it was noticed that the sputum was swarming with bacilli on the first examination. About ten days later they were decreased by half, and in another week one had to look carefully for them, there were so few. In another case, though the physical signs decreased the bacilli increased. In most of the remaining cases the bacilli decreased, and in one case none could be found after a couple of weeks' treatment.

A remarkable fact which applied to most of the cases was the rapidity with which the physical signs decreased. This continued for the first four or five weeks. Then, with two exceptions, most of the patients arrived at a stage where no further change could be made out, and some of them even returned to their former condition. In two cases the physical signs disappeared altogether.

THE SEWERAGE OF BUDE (CORNWALL).—The Bude sewerage works, which have been erected at a cost of £14,000, were formally opened on July 1st by Mr. A. C. Thynne, in the presence of a large gathering.

LITERARY INTELLIGENCE.—Mr. H. K. Lewis has purchased the remainder of the stock of the New Sydenham Society's publications, comprising the collection of volumes on medicine and surgery, the "Pathological Atlas," the "Lexicon of Medical Terms," and the "Atlas of Clinical Medicine, Surgery, and Pathology," issued by the society during the years 1859–1907. Many of the works were of a pioneer character when issued by the society and have since acquired a historic importance. The number of copies of each book has been of necessity limited on account of the heavy expense of warehousing a larger stock, and of many of the volumes only a small number remained over.

NOTES ON THE USE OF X RAYS IN THE TREATMENT OF MALIGNANT DISEASE.

BY C. E. IREDELL, M.D. LOND., M.R.C.P. LOND.,
SURGEON IN CHARGE OF THE ACTINO-THERAPEUTIC DEPARTMENT OF GUY'S HOSPITAL.

THOUGH the X ray treatment of rodent ulcer is now so successful that it will probably become the routine method of dealing with that disease, it is less generally recognised that in other forms of malignant disease X rays have in some cases a certain definite value.

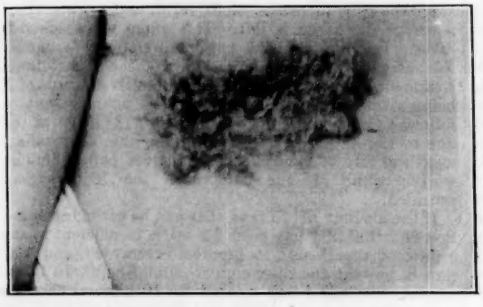
During 12 months beginning in March, 1907, 31 cases of malignant disease, excluding rodent ulcer, have been treated with the X rays at Guy's Hospital. These cases are here recorded with a view to showing the uses of this form of treatment. Of these cases 23 were inoperable, the remaining eight having been sent immediately after operation for X ray treatment in order to prevent recurrence. The effect of treatment most frequently observed in the inoperable cases was the relief of pain. In 13 cases this relief was well marked, and it extended over weeks or months, and where tenderness was present this also subsided at the same time. The pain, which was variously described as "pricking and shooting" or "dull and aching," was relieved in all three forms of malignant disease, the relief being more complete but of shorter duration in the more rapidly growing tumours. Except for this difference, growths which were dissimilar microscopically seemed to respond to treatment in the same way. After a single treatment to a tumour in which there is pain it becomes easier within 24 hours and remains so for a few days, the length of time depending on the amount of X rays given. It then returns if the treatment is not repeated and gradually reaches its former intensity. If the pain is so severe as to keep the patient awake at night sleep becomes possible after treatment.

The relief of pain is followed by the diminution in size, and in some cases the disappearance, of the tumours. Malignant glands in the neck and axilla, subcutaneous nodules in the skin, and in one case a secondary deposit in the sternum two inches in diameter cleared up. In malignant ulcers the relief of pain is followed by a diminution of the discharge; if offensive, it loses its foul smell, and finally the ulcer may heal. Ulceration was present in seven cases and in six some improvement was obtained. Figs. 1 and 2 show the improvement in Case 2 at an interval of two months, and two months later the patient was almost well. Unfortunately no photograph was taken then, and while away on a holiday death from lobar pneumonia occurred.

In Case 10 there were two large fungating masses on the inner aspects of the buttocks, and there was a discharge which was so offensive that it was necessary to burn fumigating pastilles in the ward while the patient was being treated. After a few weeks of treatment the discharge became much less and lost all its offensiveness, and the fungations became smaller and cleaner. In Case 28 the discharge was so offensive that it was noticeable to anyone entering the room in which the patient was while the dressings were still on, and so profuse that though thick dressings were changed four times a day it always soaked through to her clothes. It soon lost its offensiveness and became less, and at the present time the ulcer has to be dressed only twice a day.

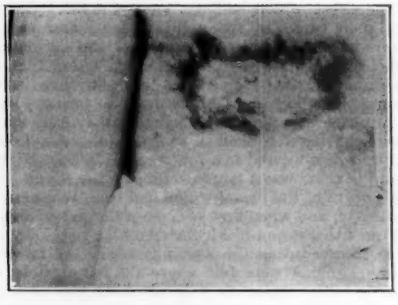
The local improvement is associated with an improvement in the general health of the patient, as shown by the fact that the appetite improves and that patients look and feel better. This improvement may be due to the relief of pain, the increased amount of sleep, the drying up of an offensive discharge, or the mental impression produced on the patient by the use of the complicated apparatus with the noise and sparking which are unavoidable in X ray work. Though one or more of these factors may be sufficient to account for the general improvement in some cases, in others they seem inadequate. In this connexion Cases 15 and 18 are of special interest. In both there were cachexia, loss of appetite, and daily vomiting. No ulceration was present and pain was absent in Case 18. After the first treatment the vomiting

FIG. 1.



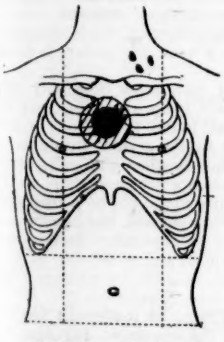
Case 2, atrophic scirrhus of the breast, March, 1907.

FIG. 2.



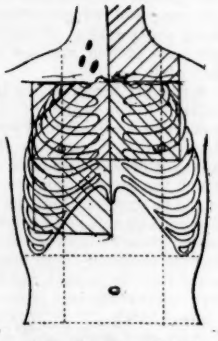
Case 2, May, 1907.

FIG. 3.



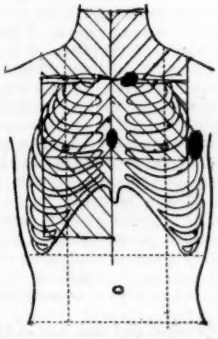
Case 3, sarcoma of breast.

FIG. 4.



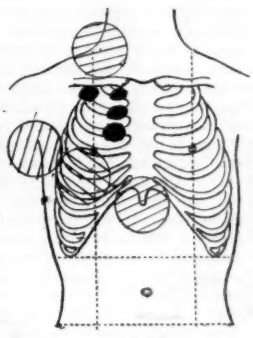
Case 3 three months later.

FIG. 5.



Case 3 eight months later than Fig. 3.

FIG. 6.



Case 17.

ceased, and the change in appearance was so noticeable that both patients said that their friends had remarked upon it. Both became worse on going to the seaside and improved again when treatment was recommenced. Subsequently the tumours became too numerous for treatment and the patients went down-hill. A possible explanation is that malignant cells produce an internal secretion which is inhibited by X rays, that this secretion circulating through the body produces a cachexia, and that it is finally excreted into the stomach, there producing a distaste for food and in some cases vomiting.

The use of X rays in influencing the occurrence of secondary deposits is shown in Cases 17 and 3. In Case 17 (see Fig. 6) the shortness of the history, the enlargement of the glands above the clavicle, the age of the patient, and the microscopical appearance of the tumour all point to a very malignant form of new growth. The areas X rayed immediately after operation were those in which it was thought most probable that secondary deposits would occur—viz., the scar, axilla, the supra-clavicular region, and the epigastric angle. Tumours which were tender and in which shooting pain was present appeared some weeks later under the centre of the clavicle and in the inner ends of the first, second, and third ribs—i.e., in those parts of the front of the right side of the chest which had not been X rayed. One treatment was then given to the painful places and the pain was relieved. It was then thought that the tumours were not sufficiently definite to justify the conclusion that they were cancerous and the treatment of these swellings was omitted. After a time the pain returned and the tumours increased to such a size as to make it clear that they were malignant in nature. They were then X rayed regularly and completely, and they disappeared in a few weeks. In Case 3 (see Figs. 3, 4, and 5) there was a large swelling in the sternum secondary to a growth of the breast which had been removed six years previously, and when first seen no enlarged glands could be felt in either supra-clavicular or axillary regions. The only place X rayed was the swelling itself. A fortnight later enlarged glands were felt above the left clavicle, there was pain in this region as well as down the left arm, and attacks of difficulty in breathing which resembled asthma were experienced. This part was X rayed and a fortnight later there was no pain above the clavicle or in the left arm and the attacks of dyspnœa had stopped. Some months later large glands were felt above the right clavicle; these, like the glands on the left side of the neck and the tumour in the sternum, cleared up under X rays. About five months after the treatment was started the patient became free from pain and said that she felt perfectly well and this state of well-being continued for about three months, when she began to go down-hill. Small nodules of growth appeared in the lower part of the sternum, at the inner end of the left clavicle, and near the lower border of the left pectoralis major, that is each nodule appeared near the line dividing two different areas of treatment. This probably was due to the fact that the rays at the edge of a four-inch square are less intense than they are at the centre. The amount of X rays given was sufficient to prevent the occurrence of secondary deposits in the centre of the areas, but not at the edges. If this explanation is correct better results might be expected if the separate areas treated are reduced in size. These two cases seem to make it advisable to X ray, not only those places in which secondary deposits are likely to occur, but also the parts between them and the primary growth. In the case of cancer of the breast it is advisable to X ray the whole of the front of the chest, the neck, and the axillæ. Probably the lives of most of the patients in whom improvement has been noticed have been prolonged for some months, but so far nothing further can be claimed. As all the patients treated have been out-patients it has not been possible to ascertain the cause of death with certainty in those cases in which it has occurred. Some of the cases were so advanced as to be almost hopeless from the first, and in these death was probably due to internal deposits which could not be affected by treatment. In others the early signs of dermatitis prevented sufficient treatment to be given to completely arrest the progress of the growth. A dermatitis when it has subsided leaves behind it an irritable condition of the skin to X rays which lasts for a considerable time.

The irritable condition just mentioned and the period of its duration vary with the degree of dermatitis produced, and therefore the earliest signs are of considerable importance. The first thing to be noticed is a slight bronzing of the skin, which gradually becomes darker. The pigmented parts of the body become bronzed more easily than do those that are not pigmented, and bronzing comes on more quickly in those patients who are dark-complexioned and in those who are advanced in life. From this it follows that bronzing in a person of fair complexion is a more definite indication for leaving off treatment than it is in others. The second stage is a red flush which supervenes on the bronzed area. If larger amounts of X rays are given the intermediate stage of bronzing does not occur. In the third stage the redness increases and the area becomes painful, the pain varying in intensity from being slight and transient to being severe enough to prevent sleep. It is described as burning and smarting, and in the more severe degrees cutaneous hyperæsthesia is present. The patients when questioned say that the pain is quite different in character from that of the cancer, which they describe as being "pricking and darting." This distinction is important when a patient who has been under treatment for some time complains of pain. In the one case it is an indication for leaving off the X rays, while in the other it shows that X rays are not being given in sufficient quantity to check the growth of the cancer. In the next stage the pain increases, blebs form, and a raw surface with a serous discharge is left. This stage was reached in four cases. In all of them the patients were well a month after the onset of the pain; no scarring of the skin followed and treatment was resumed as before, smaller amounts of X rays being given. In these cases the sequence of events was as follows: (1) relief of the cancer pain; (2) onset of the pain due to the action of X rays on the skin (here the treatment was left off); (3) onset of cancer pain which became worse; while (4) the pain from the X rays gradually subsided.

If the amount of X rays that can be given, after a condition of irritability has been set up, is insufficient to stop the growth of the disease, its progress is retarded, and if ulceration is present the discharge is diminished. In Case 8 the patient, who was being treated for 10 minutes once a week, at first improved considerably. Redness and tingling were set up after some months of treatment and since then it has only been possible to X ray in smaller amounts, with the result that the disease has increased.

The risk of a dermatitis may be diminished, while the effect on the tumour is scarcely altered, by reducing the amount of X rays given at one treatment and repeating it more frequently. Probably if the patient in Case 8, who could come for treatment only one day a week, had come twice a week and had had half the original treatment each time, the effect on the growth would have been the same, and no irritability of the skin would have been set up. In this way the original improvement might have continued.

No really satisfactory method of estimating the quantity of X rays in small amounts has been devised yet. Fairly satisfactory results have been obtained by keeping the following three factors constant: (1) the alternative spark gap of the X ray tube at three inches; (2) the distance of the anode from the skin at seven and a half inches; and (3) the current in the secondary circuit at three-tenths of a milliampère. The length of time of the treatment is varied and is with each patient a matter of experiment. In Case 28 five minutes' exposure twice a week produced in two months smarting and redness, with three minutes' exposure twice a week the pricking of the cancer returned, while under an exposure of four minutes twice a week the patient is doing fairly fell.

Since all forms of malignant cells seem especially susceptible to the action of X rays it is not surprising that the remaining form of embryonic cell found in the body is also destroyed by X rays, as shown by the several instances of X ray workers who have become sterile. The cells from which the spermatozoa are formed are not embryonic, and it might be expected that the sterility would not be permanent. Evidence on this point is not easily obtained, but Laquerrière has published a case of transitory azoospermia. In this case there is evidence, both microscopical and otherwise, of five years' sterility in an X ray worker, followed by recovery after four months' efficient protection from X rays.

Conclusions.—1. In superficial forms of malignant disease X rays may temporarily arrest the course of the disease, relieve the pain, diminish the discharge, and heal up the

ulcers. 2. Probably X rays prevent the occurrence of superficial secondary deposits. 3. Embryonic cells are more easily destroyed by X rays than are normal cells.

Details of 31 Cases of Malignant Disease, excluding Rodent Ulcer, Treated with X Rays at Guy's Hospital during 12 Months, beginning in March, 1907.

Case.	Years of age.	First attendance.	Last attendance.	Nature of case.
1	59	March 6th, 1907.	March 27th, 1907.	Growth of tongue. Recurrence.
2	55	,, 11th, ,,	Aug. 1st, ,,	Atrophic scirrhus of breast.
3	54	,, 15th, ,,	Feb. 18th, 1908.	Sarcoma of breast. Recurrence.
4	42	April 10th, ,,	April 29th, 1907.	Mastitis carcinomatoides.
5	45	,, 27th, ,,	June 24th, ,,	Carcinoma mammæ.
6	57	,, 27th, ,,	,, 21st, ,,	,, ,,
7	49	,, 29th, ,,	May 7th, ,,	,, ,,
8	65	June 12th, ,,	*	Epithelioma of lip.
9	50	,, 13th, ,,	Sept. 6th, 1907.	Carcinoma recti.
10	56	,, 13th, ,,	Nov. 21st, ,,	Carcinoma recti. Recurrence.
11	42	,, 24th, ,,	*	Carcinoma mammæ.
12	43	,, 29th, ,,	Aug. 24th, 1907.	,, ,,
13	40	,, 29th, ,,	July 3rd, ,,	Carcinoma recti.
14		July 10th, ,,	Aug. 28th, ,,	Carcinoma mammæ.
15	47	,, 16th, ,,	Oct. 10th, ,,	Melanotic sarcoma. Recurrence in scar in back and other places.
16	50	Aug. 6th, ,,	Sept. 6th, ,,	Carcinoma mammæ. Recurrence.
17	29	,, 8th, ,,	*	Carcinoma mammæ.
18	53	,, 8th, ,,	Dec. 6th, 1907.	Melanotic sarcomata.
19	63	,, 15th, ,,	*	Carcinoma mammæ.
20	50	,, 27th, ,,	*	Recurrent carcinoma mammæ (rt.).
21	72	,, 29th, ,,	Sept. 17th, 1907.	Carcinoma mammæ.
22	48	Sept. 2nd, ,,	Nov. 27th, ,,	Recurrent carcinoma mammæ.
23	54	,, 9th, ,,	*	,, ,,
24	48	,, 10th, ,,	Sept. 19th, 1907	Growth of rectum.
25	56	Oct. 11th, ,,	Nov. 6th, ,,	Recurrent carcinoma mammæ.
26	50	,, 15th, ,,	*	,, ,,
27	37	Nov. 4th, ,,	Nov. 22nd, 1907.	Recurrent growth of uterus.
28	36	Dec. 11th, ,,	*	Recurrent carcinoma mammæ.
29	37	Jan. 20th, 1908.	*	Epitheliomatous glands in left groin.
30	45	,, 29th, ,,	Feb. 21st, 1908.	Growth of rectum.
31	43	,, 30th, ,,	,, 21st, ,,	,, ,,

* Still attending for treatment when article was written.

Remarks upon the Respective Cases.

Case 1.—No improvement.

Case 2.—Pain diminished. Arm could be moved more freely. Ulcer almost healed up when patient died from pneumonia.

Case 3.—Pain relieved, general improvement, and patient said that she felt quite well. Five and a half months after treatment had started a secondary deposit in the sternum two inches in diameter and enlarged glands above both clavicles cleared up. Patient began to go down-hill in December, 1907. Redness and smarting pain from X rays in January, 1908.

Case 4.—No improvement.

Case 5.—Prophylactic.

Case 6.—Recurrence in the scar and secondary deposits in the spine. No improvement.

Case 7.—No improvement. Nodules in the scar and in the skin around it.

Case 8.—Discharge and pain diminished. Ulcer decreased in size. Redness and tingling produced, and since then the ulcer has increased in size.

Case 9.—Prophylactic.

Case 10.—Large fungating masses on the buttocks, with profuse offensive discharge. Appetite bad and pain preventing sleep at night. The discharge diminished and lost its offensiveness. Appetite improved and pain diminished, so that the patient was able to sleep at night. Fungations became cleaner. The patient began to lose ground in October, possibly owing to secondary deposits in the liver.

Case 11.—Prophylactic.

Case 12.—Growth of the breast and subcutaneous nodules. The patient felt better for treatment, and the appetite improved. Pain in breast, neck, and back relieved. Subcutaneous nodules cleared up. Gained three pounds in weight. Gave up attending as she could not afford to live in London.

Case 13.—Prophylactic.

Case 14.—Prophylactic.

Case 15.—The patient was sent for treatment to have the pain of the tumours in his back and axilla relieved. When the pain was easier he went to the seaside and returned for treatment in three weeks. He was vomiting daily and looked very ill. The tumours had increased in size and number. The vomiting stopped after the first treatment, and in a week he was feeling better and had gained three pounds in weight. The appetite was good. It was impossible to treat all the tumours, and those which were not treated grew, and two months later he was as ill as he had been before, though he came up for some time after this in order that he might have his pain relieved by treatment.

Case 16.—Treatment had no effect on the right arm, which was swollen and œdematous. The pain in the scar was severe and prevented sleep. The pain was soon relieved and the patient went away for a holiday and he died while he was away.

Case 17.—Prophylactic. This case is described in the article. Redness and smarting produced by X rays to several areas and vesication in the axilla. At the present time the chest is free from recurrence. Since December there has been pain down the left leg and also œdema. No cause can be found for it, but it is probably similar in nature to the œdema found in the arm in cancer of the breast. Pain in the chest was always relieved.

Case 18.—Vomiting daily. This stopped when treatment was started. There was no pain, but the patient said that she felt better for treatment and she twice returned from the seaside, as she found she missed it so much. She gradually became worse.

Case 19.—Enlarged glands in the neck cleared up. The ulcer has almost healed. The patient has had redness and smarting from X rays. The growth in the breast itself is larger than when treatment was started.

Case 20.—Arm swollen and œdematous (not improved). The shooting pain in the scar yielded to treatment, as also did the enlarged glands in the right supra-clavicular triangle. The pigskin condition of the left breast has cleared up.

Case 21.—No improvement. Attended three times only.

Case 22.—The enlarged glands in the axilla and the neck diminished in size. The shooting pain in the neck, the axilla, and the chest relieved. Redness and tingling produced by X rays, after which the patient gradually became worse.

Case 23.—Ulcer on chest. Discharge and pain temporarily relieved. Redness and tingling produced by X rays.

Case 24.—Prophylactic.

Case 25.—No improvement.

Case 26.—Enlarged glands above both clavicles and an ulcer and nodules in the scar. Pain relieved and all the growths are smaller.

Case 27.—No improvement noticed.

Case 28.—Very large offensive malignant ulcer. Discharge diminished and the offensive smell cleared up. Appetite improved and the pain so diminished as to make sleep possible. Redness and tingling from X rays produced.

Case 29.—No improvement noticed.

Case 30.—Prophylactic.

Case 31.—Prophylactic.

Devonshire-street, W.

A CASE OF SEVERE FACIAL CARBUNCLE, WITH LUDWIG'S ANGINA AND PAROTITIS,

SUCCESSFULLY TREATED BY VACCINES, COMBINED WITH THE ADMINISTRATION OF REPEATED DOSES OF CITRIC ACID.

BY H. B. WALTERS, M.R.C.S. ENG., L.R.C.P. LOND.; RUSSELL COOMBE, M.A. CANTAB., F.R.C.S. ENG., SURGEON TO THE EXETER DISPENSARY; AND R. V. SOLLY, M.D. LOND., F.R.C.S. ENG., PATHOLOGIST TO THE ROYAL DEVON AND EXETER HOSPITAL.

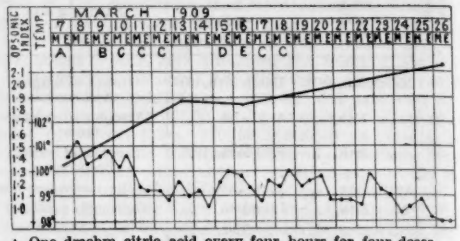
THE patient whose case is now described was a girl, aged 17 years, under the care of Mr. H. B. Walters at Chudleigh. On Feb. 22nd she noticed a pimple on the right cheek, which she squeezed, but no pus exuded. When first seen two days later she had a hard indurated inflammatory mass of about the size of a shilling on the right cheek, adjoining the lip. The temperature was 99° F. Fomentations and a mixture containing perchloride of iron were ordered. On the 27th the upper lip on the right side began to swell, and on the following day pus was discharging by many small holes from its under surface and the lower lip was beginning to swell. The temperature was 101°. On March 1st the symptoms were in every way worse. The local conditions were as follows. The whole of the right cheek was dusky in colour, with an indurated swelling extending upwards from the lip, the eye being nearly closed and the groove on the side of the nose nearly obliterated. She was almost unable to open her mouth, there were sordes on the teeth, and the tongue was very foul. There was no fluctuation present. The temperature was 103°, the pulse-rate was 140, and the patient was in a drowsy,

semi-delirious condition and evidently very ill. Mr. Russell Coombe having been called into consultation, Dr. R. V. Solly was sent for with a view to vaccine treatment and he immediately inoculated a dose of 50,000,000 staphylococci (mixed stock vaccine). On the 2nd there was not much change, but the patient's temperature was rather lower and there was some improvement in her general condition. On the 3rd a culture taken from the pustules of the lip gave a pure growth of staphylococcus aureus, from which a vaccine was prepared, and on the evening of the above date a dose of 25,000,000 staphylococci was administered. On the 6th it could be seen that definite improvement had taken place since the last injection. There were less swelling of the upper lip and less discharge, but there was a good deal of submaxillary swelling of a brawny character, suggesting Ludwig's angina. Another injection of 25,000,000 of the patient's own staphylococci was given. On the 7th it was found that blood withdrawn into a Wright's blood capsule, with a view to estimating the opsonic index, clotted almost immediately, and therefore one-drachm doses of citric acid were administered every four hours for four doses. The opsonic index was 1·35. On the 8th the temperature dropped to 99·6° and altogether had a lower range. The patient still improved, and the swelling was gradually decreasing, the right cheek being practically well, but there being a hard indurated swelling in the left cheek. On the 9th one drachm of citric acid was administered for two doses. On the 10th, 11th, and 12th half a drachm of citric acid was administered for 12 doses. After this the temperature became gradually lower in range and the local condition improved. The opsonic index on the 13th was 1·89. On the 15th the left parotid gland became enlarged and painful. Glycerine and belladonna fomentations were applied and 50,000,000 of the patient's own staphylococci were injected on the 16th. The effect of this was to cause some malaise, but on the next morning the temperature was lower. On the 17th half-drachm doses of citric acid were again administered every four hours and were continued for two days. The temperature now gradually fell, the parotid swelling slowly disappeared, and the patient made an uninterrupted recovery, the only sign of the illness that was left being a dimple in the left cheek caused by the skin becoming attached to the mucous membrane of the cheek, just over the opening of Stenson's duct. The opsonic index on the 26th was 2·2, the pulse-rate was 76, and the temperature was 98°.

Remarks by Mr. RUSSELL COOMBE.—This is the fourth case of facial carbuncle that I have seen. The first occurred when I was a dresser under Mr. T. Pickering Pick at St. George's Hospital, the second when I was house surgeon to Mr. Timothy Holmes in the same hospital, and the third was a case I saw in private practice in North Devon some 10 years ago. These patients all died in spite of every effort. The present case is the first one that I have seen since the advent of vaccine treatment, and the result leaves me in no doubt as to the line of treatment which should henceforth be adopted in these serious illnesses. Great credit is due to Mr. Walters for so early recognising the gravity of a distinctly rare condition, and there is no doubt that without this early recognition the girl's life could not have been saved.

Remarks by Dr. SOLLY.—I think there can be little doubt, taking into consideration the bad prognosis in these cases when treated by ordinary methods and the very serious condition of this patient when vaccine treatment was begun, that this treatment turned the scale in her favour, although, unfortunately, owing to the fact that I was summoned to the patient's home at Chudleigh in a great hurry and had only time to collect material for the inoculation, no opsonic index was taken at the beginning of this treatment. All the symptoms, including high temperature, quick pulse, drowsiness, and delirium, pointed to the condition being one of extreme toxæmia and a marked negative phase. There was some improvement after the injection of 50,000,000 of mixed stock vaccine, but this was more marked after the patient had received two doses of 25,000,000 of a vaccine made from her own staphylococcus. The opsonic index, when first taken 24 hours after inoculation, was raised to 1·35, and finally, when the patient was nearly well, it reached 2·2, and the accompanying chart shows well what has been so often demonstrated—namely, that the index rises with lowered temperature, improved clinical condition, and satisfactory immunisation of the patient.

A very important point in the treatment was the administration of citric acid. At the time when this was begun there were brawny patches in the cheek and submaxillary region and the blood drawn into the Wright's blood capsule clotted almost at once. The benefit of this treatment was very soon observed, the temperature falling more rapidly, and the swelling subsiding without suppuration in the case of the left cheek, submaxillary region and parotid gland,



A, One drachm citric acid every four hours for four doses. B, One drachm citric acid, two doses. C, Half drachm citric acid every four hours. D, Left parotitis began. E, inoculation of autogenous vaccine, 50 million bacteria. The upper line denotes the opsonic index, the lower the temperature.

though there can be no doubt that these parts were infected with staphylococci. Obviously the citric acid so lowered the coagulability of the blood that lymph containing large amounts of antibacterial and antitryptic bodies was freely admitted to the infected parts and the organisms were thereby destroyed before formation of pus or destruction of tissue could take place.

We are indebted to Sir A. E. Wright for our knowledge of the means by which we may influence the coagulability of the blood by either citric acid or lactate of calcium, and he himself has reported a case of Ludwig's angina of the face where on incision no bleeding or exudation took place, and the blood withdrawn from a vein at the bend of the elbow clotted almost immediately. The opsonic index was high, and on culture staphylococci were obtained. Administration of one-drachm doses of citric acid every three hours for six doses caused rapid improvement, and finally complete recovery. I have also observed the benefit of this treatment in a case of severe carbuncle at the back of the neck and of a whitlow due to staphylococcus aureus. After the second injection of 25,000,000 of autogenous vaccine on March 6th, no injection was given for ten days as the opsonic index was raised and the condition was satisfactory. Then parotitis on the left side began and the temperature became somewhat higher in range, and it was thought advisable to give another injection. This produced slight toxic symptoms, but the temperature was lower on the next day. Citric acid was again recommenced, and after this there was never any occasion for further inoculation as the patient made an uninterrupted recovery and without any ill effects locally. Fomentations were applied as already mentioned and pus was washed away from the inner surface of the lip, but no treatment was employed other than that described and no incisions were made.

A CASE OF RETINAL DETACHMENT IN PREGNANCY ASSOCIATED WITH NEPHRITIS.

BY THOMAS WILSON, M.D. LOND., F.R.C.S. ENG.,
OBSTETRIC OFFICER TO THE GENERAL HOSPITAL, BIRMINGHAM;
AND
ROBERT BEATSON HIRD, M.D. BIRM., M.R.C.S. ENG.,
LATE RESIDENT SURGICAL OFFICER AT THE BIRMINGHAM AND MIDLAND EYE HOSPITAL.

DETACHMENT of the retina as a consequence of albuminuria in pregnancy is rare. A case resulting in complete recovery was published in THE LANCET of May 18th, 1901, by Mr. R. G. Hann and Mr. R. Lawford Knaggs, who give references to a case of detachment occurring during severe eclamptic attacks in the eighth month of pregnancy and to one of gradual onset occurring in association with general dropsy about the time of delivery recorded by Dr. Reginald Southey in a clinical lecture on Pregnancy Nephritis.

In 1902 Heilbron[1] was able to collect 21 more or less fully recorded cases, and he found that detachment usually affects both retinæ, begins suddenly, and is accompanied by notable diminution or complete disappearance of vision. In every case the detachment subsided within 14 days after delivery, but in only a small number of cases (three in 21) was the recovery of vision complete in both eyes. In one patient complete blindness persisted. The permanent diminution in vision was due not to the detachment itself but to complication by albuminuric retinitis. The retinal detachment especially affects the lower half of the eyeball and is due to exudation between the retina and choroid.

In the following case the blindness did not come on suddenly but had been gradually increasing for about a fortnight. Induction of premature labour was followed by steady improvement in vision and disappearance of general œdema, and by more gradual improvement in the renal condition.

The patient, aged 25 years, presented herself on Sept. 24th, 1907, at the out-patient department of Mr. Henry Eales, honorary surgeon to the Birmingham and Midland Eye Hospital, to whom we are indebted for permission to publish most of the observations on the condition of the eyes. The patient, who was in the eighth month of her pregnancy, complained of blurred vision and swelling of the eyelids, which had been noticed for 14 days, and had begun a little earlier on the right side. Morning vomiting had continued during the whole of the pregnancy, the ankles had been swollen for six weeks, and the urine was said to have been diminished in quantity for the last three months. There was no history of scarlet fever or of kidney trouble, no sign of syphilis, and the woman had always been strong and healthy. There was œdema of the eyelids and of the conjunctivæ. Vision in both eyes was 6/60, and could not be improved by glasses; there was some hypermetropic astigmatism. On either side the field of vision was diminished, especially above the horizontal meridian, and there was a large retinal detachment occupying the lower part of the vitreous chamber. The ophthalmoscope showed no signs of retinitis or hæmorrhages, and the optic discs were normal. The accompanying charts show the extent of detachment when the patient was first seen.

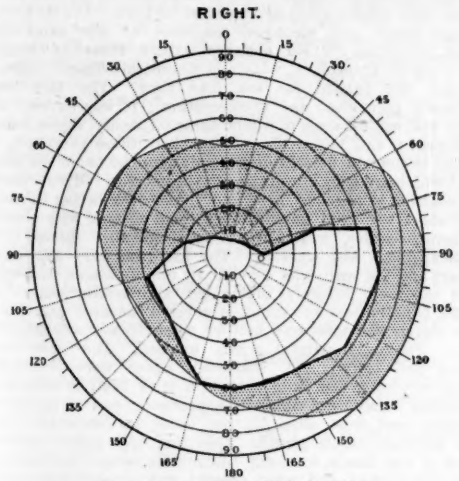


Chart showing extent of detachment.

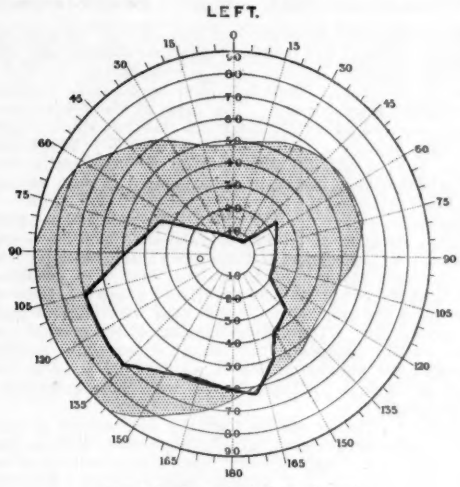


Chart showing extent of detachment.

The urine was nearly solid with albumin. The gravity of the case was at once recognised; the detached retina was regarded as part of the general œdema, and the only hope of saving the woman's sight appeared to lie in immediate treatment. The patient was therefore transferred at once to the General Hospital, where she was admitted under the care of one of us (T. W.). The account of the case that follows is taken from the notes of Dr. Charlotte Bailey.

On admission there was œdema of the face, legs, and abdominal wall. The urine was acid, of specific gravity 1030, becoming practically solid on testing for albumin. Under the microscope were seen some red blood corpuscles, together with hyaline and granular casts. 22 ounces, containing a urea percentage of 1·7, were passed in the 24 hours.

Induction of labour.—On the evening of Sept. 24th a celluloid bougie was passed into the uterus. On the next morning the os would admit the tip of the little finger, and another bougie was inserted at 10 o'clock; in the evening pains were occurring every ten minutes and the bougies were taken out. On the morning of the 26th the cervix was about three inches in diameter. The membranes were ruptured at 10 o'clock and a living child, weighing 3 pounds 2 ounces, was born two and a half hours later. The placenta was delivered a quarter of an hour afterwards and showed marked œdema of the cord. The child only lived one week.

In the 24 hours from Sept. 25th to 26th 22 ounces of urine containing 168 grains of urea were passed, dark-brown in colour, becoming practically solid on testing for albumin, showing hyaline casts but no blood corpuscles. On the following day the uterus was well contracted, the abdomen was still enlarged and bulged in the flanks, there was dulness in each flank and above the pubes, and well-marked ascites. There was great œdema of both legs and of the abdominal wall and of both conjunctivæ; the lungs were free. The patient complained of a little difficulty and oppression in breathing and of some headache. For the next three days there was a good deal of headache but the patient was otherwise comfortable and had good nights. She was treated by hot packs and by the administration of compound jalap powder each morning. On Sept. 30th, and again on Oct. 2nd, a leech was applied to each temple.

On Oct. 1st it was noted that the sight was gradually improving and that the patient could see much better. The general œdema was much less marked but there was still some ascites. On the 7th a varying degree of headache had persisted but there was no demonstrable ascites; the uterus had subsided into the pelvis. The conjunctival œdema had disappeared with the exception of a small patch on the outer corner of the left eye, while vision had gradually improved, so that large letters could be seen.

On the 8th Mr. D. C. Lloyd Owen kindly reported that the curtain of retinæ had fallen back with but slight loss of function; there were some hæmorrhages along the course of the vessels and still small heapings up of the retinæ. On the 13th it was reported that the patient had had mild delusions during the night and often began broken sentences. On the 14th she had a curious expression in the eyes and a sardonic smile; she was drowsy but easily roused, and had had some delusions during the night, thinking that her husband was sitting by her. There were rises of temperature to 100° F. on four days of the first ten of the puerperium and to 102° on the third day. From the eleventh to the fifteenth day the

[1] Berliner Klinische Wochenschrift, 1902, Nos. 4 and 5, pp. 69 and 103.

temperature was constantly raised from 100° to 102° and once to 103°. By the twenty-first day the temperature had settled down and remained thereafter normal. In the 24 hours after delivery 110 ounces of urine were passed.

Table showing the Characters of the Urine.

Date.	Quantity.	Sp. gr.	Albumin.	Blood.	Deposit.	Urea.
	ozs.					
Sept. 25th.	22	1030	Solid.	Present.	Hyaline and granular casts; blood.	1·7%
,, 26th.	22	1030	,,	,,	Hyaline casts; no blood.	2·4 % = 68 grs
,, 27th.	110	—	—	—	—	—
,, 28th.	102	1010	Dense cloud.	Present.	No casts; débris.	0·8%
,, 29th.	80	—	—	—	—	—
,, 30th.	76	1012	Dense cloud.	—	—	0·8%
Oct. 1st.	68	1030	,,	None.	—	0·9%
,, 2nd.	68	1015	,,	,,	—	0·9%
,, 3rd.	66	1015	,,	,,	Débris.	0·8%
,, 4th.	80	—	—	,,	—	—
,, 5th.	90	—	—	—	—	—
,, 6th.	70	—	—	—	—	—
,, 7th.	50	1015	Dense cloud.	Not catheter.	R.B.C.; granular casts.	0·9 % - 196 grs.
,, 8th.	46	—	—	—	—	—
,, 9th.	50	—	—	—	—	—
,, 10th.	70	—	—	—	—	—
,, 11th.	51	—	—	—	—	—
,, 12th.	53	1016	Dense cloud.	Present. Catheter spec.	R.B.C.; granular casts.	0·9%
,, 24th.	32	—	Cloud.	—	W.B.C.	1·1%

R. B. C. = Red blood corpuscles. W. B. C. = White blood corpuscles.

The patient was transferred on Oct. 25th to the Birmingham and Midland Eye Hospital for further observation. She was then free from headache and œdema, and the sight was steadily improving. There had been considerable apparent loss of flesh since delivery. The fields of vision were much larger, especially the right one, which was nearly full. Sight had also improved. R.V. = 6/24 (1) with + 1·50 cyl. axis vert. L.V. = 6/36 (1) with + 1·50 cyl. axis vert. The retinal detachment had entirely disappeared in each eye and the fundi presented the following appearance:—

Right eye.—The optic disc was a little pale and not quite distinct, the upper and lower edges blurred, and the vessels running over the edge as if there was a little swelling. The arteries were about normal, but the veins were somewhat engorged and compressed by the arteries where they crossed. The whole eye ground was dotted over with pigment spots of varying size. There were thinning of the choroid and some whitish changes in the retina; a few white patches obscured the arteries in places, as also did some of the spots of pigment. All the changes were more pronounced at the periphery.

Left eye.—Similar except that the disc seemed a little paler. Afterwards sight gradually improved. R.V. = 6/18 part with + 1·0 cylinder axis vert. = improved. L.V. = 6/18 part with + 1·0 cylinder axis vert. = 6/12 most. Reads J. 1 at eight inches. Both fields of vision are quite full. The fundi have hardly undergone any change; there are no white patches over the vessels and no definite pallor of the discs. The patient gets occasional œdema of the lids but none of the legs.

The patient was seen in the out-patient room at the General Hospital on April 1st, 1908, looking well. There was no increased frequency of micturition, the urine was acid, and showed a haze of albumin, and on microscopical examination no blood cells or casts could be detected. At the end of January, 1909, she was again seen in fairly good health, but complained of occasional bad headaches. The catamenia had been regular. The urine, acid, 1014, contained no casts, but still showed a distinct haze of albumin.

A CASE OF ACUTE LUPUS ERYTHEMATOSUS.

BY J. E. R. McDONAGH, F.R.C.S. ENG.,
CLINICAL ASSISTANT IN THE SKIN DEPARTMENT, ST. BARTHOLOMEW'S HOSPITAL, LONDON.

A FEMALE patient, aged 15 years, was admitted into St. Bartholomew's Hospital on March 12th, 1907, complaining of blueness and numbness of both hands and feet. She had been quite well up to December, 1906, when she first noticed her hands gradually becoming blue and numb. A few weeks later the feet likewise became affected. For some years previously the patient had suffered from chilblains. Past history and family history *nil ad rem.*

On admission the fingers and toes were bluish, showed old scars, and were cold to the touch. There were some blotchy red patches on the face. The nose and ears were normal. The urine was normal. The temperature was 97·4° F. and the pulse was 108. The patient complained of abdominal pain after food. Further examination revealed nothing. A few days after admission a red rash appeared all over the face and on both wrists, extending up the forearms, being accompanied by a persistently raised temperature. The urine was tested for hæmoglobinuria, but none was found. March 26th: The face had become very much worse, the nose appeared cyanosed, and albumin was present in the urine. April 3rd: The nose had become very sore and swollen, also the upper lip, so that the patient had to breathe entirely through the mouth; she also complained of headaches. 12th: The face, the hands, and the feet were better, but patches of erythema appeared on the arms and a papular eruption on the back, many of the papules being conglomerated together to about the size of a sixpenny-piece, and having a desquamating surface. The lungs were carefully examined and they showed nothing abnormal. There was a gallop rhythm at the heart's apex. The central nervous system was examined and the deep reflexes were found to be markedly increased. There was marked pseudoclonus and a questionable true clonus of the left ankle. The plantar reflexes on both sides were also questionably of the extensor type. Dr. H. Lewis Jones tested the electrical reactions of the arms and legs, reporting: "No changes except those of simple decrease of irritability, which is almost universal." 23rd: I saw the patient for the first time. The face was diffusely pigmented and erythematous; it was covered all over with scales, some of which came off easily, others being adherent; the latter on removal had those processes of horny tissue which fitted into small depressions on the skin, and which are typical of lupus erythematosus. Minute areas of scarring were found here and there. On having the hair cut short two bald patches were seen, covered with closely adherent scales, which when removed also showed the typical plugs and scarring. The hair was very thin elsewhere and the scalp was covered by minute scales, and was, like the face, diffusely pigmented and erythematous. A small papulo-squamous eruption covered the neck and chest. The fingers and toes were neither cyanotic nor swollen, but were distinctly painful when touched. The skin was tense and shiny, and scattered about were depressed scars varying in size from that of a pin's head to that of a split pea; they were white in appearance, had no erythema around, and most often did not occur in connexion with the follicles. This atrophic condition had spread up the back of the hands to about the middle, where the scarring was less marked, and when present was covered with scales and surrounded by a zone of erythema. Going over the wrists right up the forearms was a papulo-squamous eruption. As elsewhere, many of the scales on removal possessed the horny processes. 30th: The patient had signs of bronchitis and a bilateral facial herpes appeared. All this vanished in a few days and the temperature dropped to normal. May 18th: The fever reappeared and both hands became markedly cyanotic. Both the nose and the upper lip were again swollen and pus came out of the left nostril. 21st: The patient had some rigors, the temperature went up to 105°, and an impetiginous eruption had more or less affected the whole face. 25th: The face began to clear up, but there were several enlarged and painful glands in the neck. June 1st: A crop of minute vesicles (sudamina) appeared all

over the chest and abdomen, accompanied by a rise of temperature and bilateral swelling of the neck in the region of the parotid glands. 5th: An abscess which made its appearance over the lower sacral region was opened and the pus was carefully examined for organisms both microscopically and by culture with negative results. From this time onward until her discharge on August 16th exacerbations of the general condition continued. For a period the temperature would remain normal and the papulo-squamous rash would appear to fade, then suddenly the fever would recur and the rash would spread.

On Sept. 17th the patient was brought up to the hospital and on examination she gave all the signs of general peritonitis. She was operated on by Mr. L. B. Rawling, but a few days later she developed a purulent pericarditis, necessitating a second operation, which was followed on the same evening by death.

The pus from both the peritoneum and the pericardium showed and grew the pneumococcus. Unfortunately, no mention is made of the skin condition while in the surgical ward and no post-mortem examination was allowed.

During the patient's first stay in the hospital a blood examination was made. The culture was negative. Hæmoglobin, 50 per cent. (Haldane), index = 0·75; red corpuscles, 3,300,000; and white corpuscles, 7800. Differential count: polynuclears, 73·5 per cent.; lymphocytes, 23·5 per cent.; large hyaline, 2 per cent.; and eosinophiles, 1 per cent. No abnormal red cells were seen. Their shape was fairly constant and the staining was uniform.

I examined microscopically several pieces of skin which in every respect were typical of lupus erythematosus.

Remarks.—Cases of acute lupus erythematosus are rare, and the cases which end fatally are either associated with tuberculosis or with pneumonia. No history of tuberculosis was obtainable and since no post-mortem examination was made it cannot be excluded. Not a few cases have been described in association with lupus pernio or a papulo-necrotic tuberculide of the hands and feet. Clinically lupus pernio came under consideration, but the absence of local swellings and glandular enlargements rather put it out of court, but it was finally negatived by the microscopical examination. There was complete absence of a granuloma with the epithelioid and giant cells which are invariably found in true cases of lupus pernio.

A point of great interest in this case is the age of the patient. It was not so many years ago that lupus erythematosus in childhood was said not to exist, but Galewsky[1] on searching the literature found 24 cases occurring between the ages of 10 and 16 years. Curiously enough, all these cases showed a strong similarity, in that the skin lesions were not so pronounced as in adults, being invariably of the erythema centrifugum type and affecting chiefly the face and the scalp and then the hands and the feet. Atrophy and scarring were but little marked. The disease also showed a strong proclivity towards females.

Whether changes in sexual life brought about by advancing puberty play any part in the etiology of the disease is impossible to say, and whether the majority of cases occurring in females is due to a disposition to congestion of the face and blushing, as suggested by Hutchinson, must also at present remain a moot point.

Since all the fatal cases have followed either tuberculosis or pneumonia, one cannot help thinking that the disease is due to a toxin; the dominating erythema in such cases would certainly support a toxic view.

I am indebted to Dr. J. H. Drysdale for kindly allowing me to examine and publish the case.

St. Bartholomew's Hospital.

[1] Archiv für Dermatologie und Syphilologie, Band lxxxiv.

DONATIONS AND BEQUESTS.—The late Mr. C. G. Swan has bequeathed £500 to endow a cot at the Bristol Royal Hospital for Children and Women.—The Chelsea Hospital for Women has received from Lady Tate £1000 to endow a bed.—The Seaside Convalescent Hospital, Seaford, Sussex, has received a donation of £1000 from Mr. Otto Beit.—Among the latest contributions received at the Bank of England for King Edward's Hospital Fund for London is a contribution of £1500 from the Drapers' Company, being the half-yearly payment of their annual subscription of £3000.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Spectroscope for Testing Colour Perception.—New Cataract Pedigrees.—Treatment by Radium.

A MEETING of this society was held on July 9th, Mr. PRIESTLEY SMITH occupying the chair.

Dr. F. W. EDRIDGE-GREEN showed a Spectroscope for Testing Colour Perception. It is constructed like an ordinary spectroscope, except that there are a telescope and collimator both fixed, and in the focus of the eyepiece there are two shutters. These cover the whole of the spectrum, and by means of them the operator can isolate any portion of the spectrum in order to show the size of the patch which seems to be monochromatic to any person. He said that whereas it used to take him three days to examine a case by the old instrument, he could now examine one in half an hour, because attached to each shutter was a drum graduated in wave lengths, graduated to the fourth degree, which was very fine. That enabled the size of the patch to be determined without any calculation. The spectroscope could be used for seeing the exact termination of the spectrum and how far the ends extend.

Mr. N. BISHOP HARMAN showed a chart illustrating some New Cataract Pedigrees. The cases illustrated the truth of Mr. Treacher Collins's contention that the cataract was a defect in the lens secretion which went to make the capsule. The patients had plaques on the back part, behind the nucleus, and including the posterior part of the lens. In one girl the cataract extended so as to include the nucleus, while in a further case it projected forward like a piece of coral through the lens, so that it seemed there was lens matter bulging through. At first he thought it was that, and that it had been needled and afterwards got hard and sclerosed.

Mr. ARNOLD LAWSON and Dr. MACKENZIE DAVIDSON communicated a paper entitled "A Preliminary Note on the Treatment of Eye Diseases by Radium." They said the cases had been selected from the out-patient clinique of Moorfields Hospital and were chosen as instances of maladies which usually proved obstinate or only improved slowly under the ordinary forms of treatment, or else were of active virulent nature and so required drastic measures. Only 17 cases had so far been tried, but in every case the result of exposure to radium had been very encouraging. Most of the cases were corneal ulcerations, four were non-ulcerative lesions, and one was episcleritis. After one application of five minutes to the hypopyon there was distinct benefit. For instance, a man, aged 35 years, gave a history of injury to the right eye. There were a deep ulcer and a grey infiltrated area of 4 millimetres diameter, and there was a large hypopyon. 29 milligrammes of radium were applied for five minutes, and five days later the injection was subsiding and the hypopyon had disappeared. Two days after a second application of three minutes the man was discharged from the hospital, the eye being not quite white, but, for all practical purposes, well. Other cases also did very well under the treatment. In all cases the only other measures adopted were the use of boric lotion and atropine where required. Some punctate erosions were also similarly treated, and gave equally encouraging results, as also did cases of old-standing trachomatous pannus, except in one case, in which there was increased vascularity after the treatment. The dosage of radium was an important point, and the small dose of 5 milligrammes seems to act as quickly as did a much larger dose. In one case the pain after the application lasted three days, but in the others the longest time was 20 hours. Dr. Mackenzie Davidson explained that the paper was a tentative one. The radium was applied in sealed glass tubes, the glass cutting off the alpha rays, so that the beta and gamma rays only passed through to the lesion.—Mr. ERNEST CLARKE and Mr. F. HEWKLEY discussed the paper.

Mr. PRIESTLEY SMITH then, in a graceful tribute, presented to Mr. Edward Nettleship the Nettleship medal for his work in ophthalmology, and Mr. NETTLESHIP replied, paying a high compliment to the many coadjutors who had helped him to complete the pedigrees on which he had been working.

Reviews and Notices of Books.

The Commercial Products of India. Being an Abridgment of "The Dictionary of the Economic Products of India." By Sir GEORGE WATT, C.I.E., M.B., C.M. Glasg., LL.D., formerly Professor of Botany, Calcutta University, and Reporter on Economic Products to the Government of India. London: John Murray. 1908. Pp. 1189. Price 16*s.* net.

THE "Dictionary of the Economic Products of India," written by the same author and published in 1885–94, having been out of print for some time, the Government of India directed that a corrected and abridged edition should be brought out. As this work was to be limited to a single volume, it was decided that it should be confined to products of present or prospective commercial and industrial importance. A representative committee was appointed to draw up a scheme; this committee comprised Sir W. T. Thiselton-Dyer, K.C.M.G., C.I.E., F.R.S., Director of the Royal Botanic Gardens, Kew, as chairman; Mr. J. S. Gamble, C.I.E., F.R.S., Professor W. R. Dunstan, F.R.S., LL.D., Director of the Imperial Institute; Sir Thomas Holderness, K.C.S.I.; and Lieutenant-Colonel D. Prain, C.I.E., F.R.S., as members. The writing of the present volume extended from 1904 to 1907.

The work as now published forms a most elaborate and accurate record of all the material previously published on the subject, as well as official matter amassed in Government offices in India. It may be regarded as a useful digest within assigned limits of all available information concerning India, and should prove a work of reference of great practical value to those interested in the commerce and industry of that country. Compiled in the form of a dictionary, the various products of the country are easily ascertained. Turning to the portions of medical interest rather than those affecting other industries, we find that the indigenous drugs of India are legion, a fair proportion being recognised in the British Pharmacopœia, while those used by the native practitioners of the East embrace still further varieties. All the recognised and more important drugs are fully and scientifically described, and their production, the amount produced, their export and commercial value are stated in each case. In the past the European population of India had to rely almost entirely for its medicines on the drug-producing centres of the world; if through any unforeseen cause India had been cut off from the rest of the world—for instance, by war—the stock of European drugs in the country would have lasted but a short time, as owing to climate it is not only inadvisable but impossible to store large supplies, as deterioration occurs. Within the last decade, however, the Government of India has formed some half-dozen factories, and several enterprising civilian manufacturing druggists have followed suit, the result being that the country is now nearly self-supporting, and compressed drugs in tablet form are turned out with a skill that will compare very favourably with that of European firms. The production and manufacture of quinine give a good example of this, for the annual imports of this drug on behalf of the Government have been discontinued, India being now able to turn out a liberal supply of an invaluable drug at a remarkably low price. The working of the drug factories has given lucrative employment to a great number of persons, and a net annual profit has resulted to India of some £10,000—a truly creditable record. Packets of quinine, each containing seven grains, are now sold at the village post offices for a farthing a packet, and as this procedure has had the immediate effect of increasing the demand the future must of necessity witness a considerable expansion both of production and manufacture. Along with this the exports of cinchona bark from the country to the United Kingdom form a source of profit; in 1906–07 the exports reached 494,587 pounds. The expansion in the export traffic of castor oil is another episode of medical interest; the export for the shipping season of 1902–03 reached over 2,000,000 gallons, representing approximately £200,000 sterling.

The production and export trade in wheat and flour are of importance to record, though here we are without the province of medicine and dealing with a subject of pre-eminent national consequence. In 1904–05 the total export of wheat was over 43,000,000 hundredweights, nearly 29,000,000 hundredweights of which were consigned to Great Britain, or nearly a third of the amount imported from all other countries of supply to the United Kingdom. The wheat-producing power of India is entirely due to the increased canal and well irrigation accomplished by the Indian Government during recent years, and these undertakings will no doubt be greatly extended in the future.

The book is well printed, well bound, and has an exhaustive index; it should form an important addition to the library not only of all interested in the economic products of India but of all political students and workers.

Rational Immunisation in the Treatment of Pulmonary Tuberculosis and Other Diseases. Comprising a Paper read before the Royal Society of Medicine, March, 1909, by E. C. HORT, B.A., B.Sc. Paris, M.R.C.P. Edin. London: J. Bale, Sons, and Danielsson, Limited. 1909. Pp. 75. Price 3*s.* 6*d.* net.

THE thesis maintained by the author in this book is that in infective disease injury is done to the cells of the body, not only or even principally by the actual toxins of the invading organisms, but by secondary products arising from breaking-down cells. He therefore holds that inoculation with bacterial vaccines is not to be relied on as a mode of treatment, but that methods must be adopted which lead to auto-inoculation—that is, to diffusion throughout the body of the products of bacterial action on its own cells. Other points raised are the untrustworthiness of the opsonic index as a measure of response to vaccines, and the advantage of a special method of recording and interpreting charts of temperature in disease. We have not space to discuss more than a few of the points which strike us, and in doing so we must premise that either from our own mental obtuseness or from some lack of lucidity of thought or expression in the writer we have found it difficult to follow the argument in many places. With regard to the general principle, it would seem that if the bacterial toxin gives rise to the secondary toxic products of cellular metabolism, then the inoculation of a bacterial vaccine will cause the appearance of these latter, and they will produce the resulting form of immunity as efficiently as if they arose from some focus of disease existing in the body. The only advantage of what is called auto-inoculation would appear to be the assurance that the toxins of the very organism which causes the disease are being employed for a stimulus, and this can be equally well done by making an ordinary vaccine from organisms isolated from the individual patient. With regard to the evidence that these secondary poisons are more important than the primary one, the only fact that we can recollect which tends to prove this hypothesis is the discovery by Sidney Martin of poisonous albumoses in diphtheria: hence at present the whole suggestion must be regarded as speculative. It is no doubt true that cells undergo autolysis by means of enzymes contained within themselves, and that these enzymes are enabled to act by reason

of some toxic influence exerted from without on the cells which otherwise resist their action. The main object in treatment would then seem to be the counteraction of the original poison—i.e., the bacterial toxin.

We are quoting only one or two instances of that loose thinking or careless writing which occurs throughout the book. On p. 7 the author states that a cell damaged by toxins "can of its own accord only return to a normal state by inciting responsive reaction in the fertilising lymph that supplies it." Leaving aside the words "of its own accord," which we might be disposed to quarrel with as indicating that there is some other means besides its own vital energy by which a cell can recover its health, we do not understand what reaction a cell can excite in the lymph, a mere solution of chemical substances and not a living body itself. Again, take the following sentence: "The sign of restoration [of cellular integrity] is the exhibition of appropriate restraining bodies." Surely a sign is something which we actually observe, and it would be more accurate to say that the recovery of the normal appearance of the cell was a sign of the formation of the (in this case) purely hypothetical anti-enzymes. Further, on p. 22, we are told that "spontaneous inhibition of auto-inoculation is effected by all the methods which the economy employs in order to arrest the disease." If this be so, it would seem that in artificially inducing this auto-inoculation—the object of the author's teaching—we are exactly running counter to those very means of natural cure which it is the aim of every wise physician to encourage.

On the whole, while we must admit that Mr. Hort's suggestions are interesting and well worthy of study, we cannot feel that he has yet established his position, and we are led at times to doubt whether the views he has formed are in themselves really clearer than the obscure language in which they are formulated.

International Clinics. Edited by W. T. LONGCOPE, M.D. Philadelphia. Vol. IV., Eighteenth Series, 1908, and Vol. I., Nineteenth Series, 1909. London and Philadelphia: J. B. Lippincott Company. Vol. IV., pp. 310; Vol. I., pp. 309. Price £1 15*s.* net per set of four volumes.

AMONGST the many interesting articles in the fourth volume of the eighteenth series of this publication is one by Dr. A. G. Nicholls (Montreal) on Acute Dilatation of the Stomach. In discussing the morbid anatomy of this condition he mentions that, out of 120 necropsies, in 35 instances the whole or a part of the duodenum was also dilated. This fact, he says, has an important bearing on the pathogenesis. In a large proportion of cases obstruction is found at some part of the duodenum, more rarely at the pylorus. The most important single condition appears to be the constrictive force exerted by the root of the mesentery where it crosses the third portion of the duodenum. It is often difficult to determine which is the primary condition—the dilatation of the stomach or the obstruction. That obstruction may be the determining cause in some instances is certain. On the other hand, it is evident that dilatation of the stomach, whether acute or chronic, is competent to produce mesenteric obstruction or to aggravate it if it be already present. One thing, however, is certain, that a vicious circle is produced. Dilatation of the stomach favours the production of mesenteric obstruction, and mesenteric obstruction leads to dilatation of the stomach. Dr. Nicholls considers that the exact sequence of events cannot be definitely settled until more cases are reported with full and careful study of the clinical features.

Amongst other articles contributed to this volume are: The Advance of Physical Therapeutics, by Dr. J. N. Pratt (Boston); Traumatic Lesions of the Semilunar Cartilages of the Knee-joint, by Mr. A. N. McGregor (Glasgow); the Rôle of Insects in the Transmission of Disease, by Dr. M. A. Brown (Cincinnati); and the Neurasthenic Syndrome, by Dr. D. J. McCarthy.

Another noteworthy contribution to this volume is one on Mikulicz's Disease and Allied Conditions, by Dr. Campbell P. Howard (Montreal). In the literature of the latter part of the nineteenth century isolated enlargement of the lacrymal or salivary glands had been noted. Mikulicz in 1888 first described the condition which now bears his name, but since then several observers have drawn attention to the disease. Cheinisse and others claimed that the points emphasised by Mikulicz served to distinguish the condition from pseudo-leukæmia and leukæmia, in either of which the same chronic painless enlargement of the lacrymal and salivary glands may occur. They claim, therefore, that the disease is a clinical entity and not a syndrome. This, however, is not the view adopted by Dr. Howard. He gives abstracts of 55 cases of "Mikulicz's disease proper," and then discusses the conditions of pseudo-leukæmia and leukæmia, and finally arrives at the following conclusions:—1. Mikulicz's disease is not a simple disease entity, but a clinical syndrome which varies very greatly in its form, etiology, and course. 2. Under this term must be accepted isolated as well as symmetrical disease of the lacrymal and salivary glands due to simple lymphomata, pseudo-leukæmia, leukæmia, tuberculosis, and syphilis. 3. A whole series of cases exists forming links in the chain from isolated lymphomata of the lacrymal or salivary glands to complete involvement of these glands with simultaneous disease of the lymphatic and hæmatopoietic apparatus.

Amongst other articles in this volume are the following: The Hospital for Advanced Cases of Tuberculosis, by Dr. L. F. Flick (Philadelphia); Occupations and so-called Rheumatic Pains, by Dr. J. J. Walsh (New York); Suppuration in Appendicitis, by Mr. E. M. Corner (London); and Absorption from the Peritoneal Cavity, by Dr. W. G. MacCallum (Baltimore).

Sanitary Law and Practice: a Handbook of Public Health. By W. ROBERTSON, M.D. Glasg., D.P.H., and CHARLES PORTER, M.D., B.Sc. Edin., M.R.C.P. Edin. Second Edition. London: The Sanitary Publishing Co., Limited. 1909. Pp. 694. Price 10*s.* 6*d.* net.

THE first edition of this work having been exhausted, the authors have availed themselves of the opportunity of bringing the book up to date; they have recast a number of sections and have added new ones—for example, those on school medical inspection and on vital statistics. The handbook in its present form more than ever impresses us as a most useful and conscientious piece of work, and this later issue should prove even more useful than its predecessor has done. So far as setting forth methods of administration to be adopted, and so far as giving a synopsis of the law relating to public health questions are concerned, nothing is left to be desired. It must be confessed, however, that the chaotic condition of existing public health legislation is forcibly brought home to the mind of the reader of this work, and it is perhaps open to question whether it is desirable that the student should concern himself with so detailed a study of differences in the public health enactments of England and Wales, London, Scotland, and Ireland, as appears by implication to be thought necessary by the authors of this handbook. The Scotchman who went to London found the inhabitants of that city speaking English, though as he remarked it was with a "southron accent"; and the differences between Scotch and English public health law are after all matters of small moment in comparison with many questions which are of far greater importance to the student. The authors of the handbook, however,

explain that it is their desire "to meet the wants of those who are undergoing a course of systematic training preparatory to presenting themselves for examination." Do examination papers justify, it may be asked, so strict an adherence to the "practical," and such rigid insistence upon legal minutiæ? If they do, it is, at any rate, well to recognise the fact that it is possible for a student completely to master a *practical* handbook, such as this, and yet to know little of some of the problems which are likely to face him and to compel his attention when he comes to be a medical officer of health. For example, the question whether cow maladies (other than tuberculosis, to which disease a full share of attention is devoted) are concerned in producing infective qualities of milk; the question of the relation of polluted shell-fish to enteric fever; or, yet again, the question of spread of small-pox from hospitals. On such a subject as that last named we should have welcomed a reference to the work of Sir William Power, in order that the student might, at any rate, be afforded a chance of discovering for himself how to think, in some lucid interval when he was not required to devote all his energies to endeavouring to commit to memory what to think.

The ever more and more tangled growth of legislation is held to compel the devotion of more and more time by students to legal technicalities, but such time will be grudgingly given by those who have realised that public health literature is also deserving of study. It might be argued with some show of justice that the student who had mastered one of the classics of that literature at first hand was better equipped for the work of a medical officer of health than he who has all the Acts and By-laws at his fingers' ends. It would, of course, be impossible to boil down and present in concentrated form the works of the masters in a handbook such as this, but there is perhaps a danger that in the press and hurry of preparing for examinations the student may fail to appreciate the fact that even in public health "there be of them that have left a name behind them." If no hint is given to guide him, the embryo health officer is only too likely to form the opinion that the only names worth remembering in connexion with public health are those of inventors of particularly ingenious appliances.

But to return to sanitary law and practice, there are some excellent words of advice, evidently written as the outcome of severely practical experience, given to health officials in this handbook. There is no doubt about the soundness of the dictum that the medical officer of health would do well to exercise tact "in various ways on different occasions"—it may be safely prophesied he will, in the course of his career, find scope for such exercise. Particularly, however, the advice given to the sanitary inspector may be commended. "He should endeavour to make himself known in his district, but it should be because he is civil and kindly, not because he is overbearing and dictatorial."

High-frequency Currents. By FREDERICK FINCH STRONG, M.D., Instructor in Electro-therapeutics at Tufts College Medical School, Boston. London: Rebman, Limited. 1908. Pp. 289. 12*s.* 6*d.* net.

WHILE books on this subject have appeared from time to time, sometimes as separate volumes but often as a section or chapter of a volume devoted to medical electricity generally, it must be admitted that as a whole the literature relating to high-frequency currents has suffered from vagueness. It has not been altogether satisfactory. A perusal of this work leaves us with the impression that, while vagueness still exists, some progress has been made in the direction of a better understanding of the subject. In the first five chapters the historical and physical aspects of the matter are treated in a sufficiently complete manner, the author relating how all the phenomena and effects can be explained by the modern electron theory. Where the problem is a difficult one for the non-technical mind to grasp, free use is made of diagrams as well as the *water analogy* to make it more easy to understand. The next five chapters are devoted to a description of the various forms of apparatus in use. The different types are compared, and the author shows the advantages of each, and how it comes that no one apparatus of the ordinary kind can fulfill all requirements. There appear to be wide differences in frequency and volume of current obtained from different forms of instruments—those having a high rate of frequency are best suited for acting upon superficial and circumscribed areas, and the lower the frequency the better is it adapted for more deeply seated structures. The coils and transformers designed by the author seem to have some very good points, and he claims to have been the originator and inventor of large numbers of instruments and methods of using them. This is all quite right and proper, but we do not see the necessity for such constant reiteration of his having been first in the field, which is likely to prove tiresome to many readers, who, after all, are more concerned with the philosophy of the subject and such evidence as there may be of the practical results in treatment that may be expected.

A number of chapters follow which are devoted to the physical properties of these currents and the methods of applying them in treatment. Physiological and therapeutic action are treated in Chapters XXI. and XXII., but it is somewhat disappointing to find how little the author has to tell us as to the "why and wherefore" of things. Actual therapeutics are given in the last three chapters, and we think this part should have received more lengthy discussion than it has. In short, notwithstanding that the book is a good one, and one that anyone who is interested in the subject will find well worth careful attention, it is a fact that too much attention is given up to the purely technical side and too little to the practical value and use of the currents at our disposal. It is also the case that most of the methods of applying those currents here described involve the possession of the special coil designed and used by the writer himself.

LIBRARY TABLE.

Atlas of the External Diseases of the Eye. By Professor Dr. O. HAAB of Zürich. Authorised translation from the German. Third edition. Edited by G. E. DE SCHWEINITZ, M.D., Professor of Ophthalmology in the University of Pennsylvania, &c. With 101 coloured illustrations. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 244. Price 13*s.* net.—*Atlas and Epitome of Ophthalmoscopy.* By Professor Dr. O. HAAB of Zürich. Second American edition from the fifth German edition. Edited by G. E. DE SCHWEINITZ, M.D., Professor of Ophthalmology in the University of Pennsylvania, &c. With 152 coloured illustrations. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 94. Price 13*s.* net.—The favour which has been accorded to these books is shown by the frequency with which they have been reprinted and re-edited. They are trustworthy guides to the branches of ophthalmology with which they deal, both as regards the texts and the illustrations. The latter are as good as could possibly be expected at the remarkably low price. Professor de Schweinitz has added a plate to the ophthalmoscopy, but otherwise the lithographs are the same as in former editions. He has also added comments to the texts, and these will be found to enhance the value of the books and give them an advantage

in matter as well as in language over the German editions for English-speaking readers.

Practical Points in Anæsthesia. By F. E. NEEF, M.D. New York: Surgery Publishing Co. Pp. 46. Price 60 cents.—This is a very conveniently produced little book, the instructions in which are based upon the practice of anæsthetics in vogue at the German Hospital, New York City. The methods in use are apparently confined to the drop method with a Schimmelbusch mask, and the tube method by means of catheter indiarubber tube and funnel. The preliminary use of morphia, one-half grain of the sulphate hypodermically half an hour before administration, is almost a routine measure. Anæsthesia is always induced with "anæsthol," a mixture of chloroform, ether, and ethyl chloride, or with chloroform. The author believes that respiratory embarrassment is always the result of "crowding" the anæsthetic, an Americanism that requires some explanation for English readers. He is evidently well impressed with the desirability of preserving as light a degree of anæsthesia as is compatible with the surgeon's requirements. Indeed, he includes prostatectomy amongst the operations for which only superficial anæsthesia is required after the skin incision. The book is too slight in its scope to be of much general service.

Notes from a Collector's Catalogue: with a Bibliography of English Cookery Books. By A. W. OXFORD. London: John and Edward Bumpus. 1909. Pp. 116. Price 5*s.* net.—The A. W. Oxford of the title-page is not only a clerk in holy orders and a Doctor of Medicine of the University of Oxford, but also busies himself with municipal work and educational matters. The modest little book before us shows the recreative side of his character—he is a collector, and one sentence of his book gives the clue to the whole art and science of collecting: "One tires of collections, but never of collecting." He commences his treatise with three rules as to how to collect wisely, as to which we refer our readers to the work itself, and then proceeds to recount how he promptly broke the second. The true joy of collecting for the ordinary collector with limited wealth is for him to buy the things he wants, or thinks he wants, which are within reach of his purse. Probably after a week or so he will find he does not want one at least of his recent purchases and then he can either sell it or give it away to a museum. The modest collector may in this way obtain as much pleasure as a prince of the tribe, such as Mr. George Salting, although, of course, he cannot hope to acquire such flawless specimens of art as anyone may see in that gentleman's loan collection at South Kensington. Dr. Oxford makes an admirable suggestion which we should like to see carried out, and that is that every village should have a museum, "in which such things as smock-frocks, flails, screeves, local engravings, should be preserved. If no proper building can be erected, why should not a part of the school, or even of the church, be used? The history of a village is its sacred history." This is quite true, and local "things," especially agricultural implements, have far more bearing on history and social matters than is generally supposed. It is probable that there is still an ox goad or two left in Sussex, for plough oxen were quite common 40 years ago and some still linger. The length of the goad was 16½ feet, from which the unit, the rod, pole, or perch, was taken. 40 rods made a furlong—i.e., furrow long, or the length of land an ox team could plough without a rest. Here is an explanatory piece of social life which is worth preserving. All local customs and folklore, too, may and often do throw light upon obscure subjects and prove to be foreshadowings of modern discoveries. For years before the antiseptic virtues of formaldehyde were extolled it was the custom of Somersetshire dairy farmers to scrub out the churns with a handful of nettles "to keep them sweet," and in "A True Gentlewoman's Delight," a cookery book of 1653, directions are given for laying a cream cheese on nettles, presumably to prevent it going mouldy. Mediæval churches were always used as museums, and there is no reason why our churches, in many places the pride of the country side, should not be similarly employed in modern days. Dr. Oxford discourses pleasantly about his various collections, which range from stay busks to old silver. Among his books is a collection of "Tractatus Varii de Pulicibus" and (in two volumes) the weekly report books from 1826–1830 of the Rev. W. Valentine, who was chaplain and house governor of the London Hospital. The reverend gentleman, it appears, had a by no means easy time with the cook, who was a lady of unfettered speech, and who was, according to one of the porters, "more like a tiger than a woman." Altogether Dr. Oxford may be felicitated both upon his collections and his account of them.

JOURNALS AND MAGAZINES.

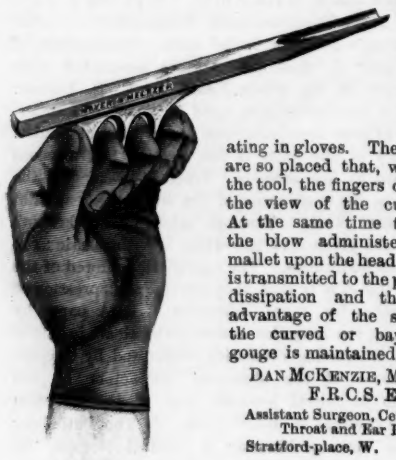
The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. II. No. 8. July, 1909. Oxford: At the Clarendon Press. Subscription price, 25*s.* per annum. Single numbers, 8*s.* 6*d.* each.—The contents of this number are: 1. Syncopal Attacks associated with Prolonged Arrest of the Whole Heart, by E. E. Laslett. The patient is a married woman, aged 40 years, who suffer from syncopal attacks associated with a slow, irregular pulse. The infrequency of the pulse is due to long intermissions lasting from two to five seconds. Tracings prove that the intermissions are due to an arrest of the whole heart and not to ordinary heart block. Tracings taken by Mackenzie's ink polygraph are given and the writer is enthusiastic as to the value of this instrument. The explanation offered of the phenomena in this case is that they are due to depression of the sinus rhythm by vagal inhibition. 2. A paper by Thomas Lewis on the Irregular Action of the Heart in Mitral Stenosis. An interesting discussion illustrated by tracings is given of some of the abnormal characters of the cardiac rhythm in mitral stenosis, and of the inception of new cardiac rhythms in heart block. 3. The Pathology of Paroxysmal Hæmoglobinuria: a Critical Review, by G. H. K. Macalister. The condition is the result of intravascular hæmolysis, which occurs when the blood serum becomes autolytic. There is in the blood a potential toxin composed of cytase and amboceptor which becomes active under certain conditions, of which the most prominent is external cold, which, however, is regarded as acting reflexly, the hæmolytic reflex travelling by the same path as the vaso-motor reflex. The relation of the condition to Raynaud's disease and to syphilis is discussed. The serum in this condition is isolytic as well as autolytic, and it is not necessary to assume any specific vulnerability of the red corpuscles. The ultimate source of the hæmolysin is not known. A useful bibliography is appended to this paper. 4. On the Frequent Failure of the Urine to Decompose in Cases of Pulmonary Tuberculosis, by W. Hale White and H. I. Janmahomed. It was found that the urine of patients suffering from pulmonary tuberculosis frequently has a high acidity, and that it may remain acid for prolonged periods. It also appears to have considerable bactericidal power. 5. Peripheral Birth Palsy, by E. F. Trevelyan. The various forms are described and illustrative cases are fully noted and figured. The prognosis and treatment are also discussed. 6. Clinical Observations on the Effects of Certain Drugs in Diabetes Mellitus, by Arthur J. Hall. The effects of codeine, opium, secretin, and aspirin upon the intake of fluid, the quantity of urine, and the daily output of sugar having been studied, the results are summarised in regard to each drug. 7. A Contribution to the Study of Congenital Family Cholæmia, by Robert Hutchison and P. N. Panton. The authors record two cases and give references to a case in the same family described by

Murchison in 1885. From a study of their own cases they conclude that one factor of considerable importance is the production of defective red cells, evidenced not only by the presence of cells of abnormal shape, size, and staining reactions, but also by increased fragility of the cells. This increased fragility is not the effect of the bile in the serum. 8. The Excretion in the Urine of Sugars other than Glucose: a Critical Review, by Archibald E. Garrod. Lactosuria, maltosuria, lævulosuria, pentosuria, and heptosuria are considered, and a useful account of each of them is given, with the tests by which they may be recognised and the conditions under which they occur.

New Inventions.

MASTOID GOUGES AND CHISELS.

Messrs. Mayer and Meltzer of Great Portland-street, W., have made for me a set of gouges and chisels after the pattern shown in the accompanying illustration. They are particularly useful when operating in gloves. The finger-holes are so placed that, when holding the tool, the fingers do not block the view of the cutting edge. At the same time the force of the blow administered by the mallet upon the head of the gouge is transmitted to the point without dissipation and thus the great advantage of the straight over the curved or bayonet-shaped gouge is maintained.



DAN MCKENZIE, M.D. Glasg., F.R.C.S. Edin.,
Assistant Surgeon, Central London Throat and Ear Hospital.
Stratford-place, W.

A NEW BINAURAL STETHOSCOPE.

THE illustration shows a new form of binaural stethoscope, which we have tried and have found satisfactory. It is light and portable, since, owing to the smallness of its metal parts, it can be easily folded and carried in either the hip or coat pocket. It will be noticed from the illustration that the spring passes round the back of the head, and therefore cannot possibly interfere with the view of the auscultator while the instrument is being used. A further advantage is that there is no rotation of the ear-pieces, when the tubing and chest piece are moved during auscultation. The spring may require slight adjustment for comfort in some people, but this seems to be an easy matter. The price is 7*s.* 6*d.* complete, and the makers are Messrs. Allen and Hanburys, Limited, of Wigmore-street, W.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are some of the principal amounts, additional to those already announced in THE LANCET, received at the Mansion House or notified directly to us as having been collected on behalf of the Metropolitan Hospital Sunday Fund up to Monday, when the sum paid in was about £40,000:—

	£	s.	d.
St. Michael's, Chester-square	761	0	0
St. Peter's, Eaton-square	327	0	0
St. George's, Hanover-square	246	0	0
Essex Church, Kensington	243	0	0
St. Peter's, Cranley-gardens	237	0	0
St. Paul's, Portman-square	173	0	0
St. Peter's, Brockley	139	0	0
Christ Church, Mayfair	135	0	0
St. Stephen's, South Kensington	130	0	0
Wimbledon Churches	125	0	0
City Corporation	105	0	0
Holy Trinity, Paddington	103	0	0
Christ Church, Gipsy Hill	99	0	0
Brockwell Park Open-air Meeting	87	0	0
St. John's Wood Presbyterian Church	74	0	0
Holy Trinity, Marylebone	72	0	0
Hampstead Parish Church	71	0	0
Victoria Park Christian Evidence Association	67	0	0
Ferme Park Baptist Church	64	0	0
Holy Trinity, Wandsworth	62	0	0
German Church, Camberwell	55	0	0
Christ Church, Highbury	55	0	0
All Souls', Langham-place	51	0	0
St. Michael's, Highgate	48	0	0
Orange Street Congregational Church	42	0	0
Weybridge Parish Church	40	0	0
Kensington Chapel	40	0	0
Holy Trinity, Upper Tooting	39	0	0
St. Martin's-in-the-Fields	37	0	0
Christ Church, Streatham Hill	37	0	0
St. Agnes', Kennington	34	0	0
Trinity Presbyterian Church, Hampstead	33	0	0
St. Olave's, Woodbery Down	32	0	0
Camden Church, Camberwell	31	0	0
Christ Church, North Finchley	31	0	0
St. John's, Blackheath	30	0	0
Waltham Abbey Parish Church	30	0	0
All Saints', West Dulwich	30	0	0
St. Mildred's, Lee	30	0	0
All Saints', Notting Hill	28	0	0
Trinity Presbyterian Church, Clapham	28	0	0
Willesden Presbyterian Church	27	0	0
All Saints', Clapham Park	26	0	0
Chapel of the Charterhouse	26	0	0
St. Alfege, Greenwich, and Chapel of Ease	25	0	
St. Luke's, Bromley	25	0	0
Walthamstow Parish Church	25	0	0
St. John's, Pinner	24	0	0
St. Matthew's, Upper Clapton	24	0	0
Emmanuel, Chelsea	24	0	0
St. John with All Saints', Epping	23	0	0
St. Andrew's, Alexandra Park	23	0	0
St. John at Hackney	23	0	0
St. Katherine's Royal Hospital Collegiate Church	22	0	0
St. Mark's, Kennington	22	0	0
St. Philip's, Kensington	20	0	0
Magdalen Chapel, Streatham	20	0	0
St. Andrew Undershaft	20	0	0

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON).—Demonstrations in Clinical Medicine will be given at this College throughout the months of August and September, beginning on Monday, August 9th, at 2 P.M., in the clinical theatre at the hospital. The subjects will be taken in the following order:—Mondays—Diseases of the Lungs. Tuesdays—Diseases of the Blood. Wednesdays—Diseases of the Digestive System and Children's Diseases. Thursdays—Diseases of the Nervous System. Fridays—Diseases of the Heart and Vessels. All members of the profession will be admitted on presentation of their address cards, and further particulars can be obtained at the College from the Warden, Mr. Munro Scott.

THE LANCET.

LONDON: SATURDAY, JULY 17, 1909.

The Imperial Cancer Research Fund.

IN another part of this issue we publish the seventh annual report of the Imperial Cancer Research Fund, and in it we find much to afford us both satisfaction in the work that has already been done and hope for the future. The only aspect of the report which is of a saddening tendency is the financial one; support of the Fund is very poor. When the Cancer Research Fund was established in 1903 nearly £50,000 were received, and in the following year a little more than half this amount, but 1905 saw a drop to £3000; in 1907 it was £500, and in 1908 it was under £700. It is true that the Bischoffsheim donation and some legacies have been received as well, but it is depressing indeed to find that for the last two years less than £1000 a year has been contributed to what is acknowledged to be among the most important research works in the realm of medicine. We hope that in the next report it will be recorded that a great increase has occurred in the amount of subscriptions, for the capital of the fund is being diminished year by year. We place the financial position of the Imperial Cancer Research Fund in the front of our remarks, for we feel that any relaxation of the energy with which the research is being conducted will be intensely regrettable, while the whole spirit of the annual report shows that such relaxation will only come from lack of money. The great help received by the Fund from the Royal College of Physicians of London and the Royal College of Surgeons of England in the granting of free laboratory accommodation has enabled the most rigid economy to be practised, but the time is approaching when these Colleges will be unable any longer to give this assistance, and then the need for further financial aid will become even more acute. The public, we trust, will soon come to the rescue.

The work that has been done up to the present is of vast importance and full of encouragement to all who know the difficulties in the way of research; but the results are not sensational, and it may be that the steady diminution in the financial support is due to the fact that so far no "cure for cancer" has been found and no certain clear and simple cause of it has been discovered. No one familiar with the points at issue expected any such immediate outcome, but the public was more sanguine. Much has, however, been done, and probably no step has been of more value than the discovery of the inoculability of malignant growths. This was first shown to be possible by JENSEN, and now the conditions under which inoculation is possible are so well known that success in inoculating a malignant tumour from one animal to another of the same species is almost certain. At one time many investigators refused to allow the carcinomatous nature of the inoculable tumours, but now we believe this is acknowledged by most observers. The value of this discovery consists mainly in the provision of an unlimited amount of material on which the action of drugs and other methods of treatment can be tried, and in which can be observed the changes occurring in a series of cancerous growths. The choice of the mouse as the chief animal for the study of cancer has been fully justified by the results obtained, and its small size and the little cost of maintenance are also strong arguments in its favour. In the study of the tumours produced by inoculation the important discovery was made that in one case the supporting stroma of a carcinoma under went sarcomatous transformation, as was reported in the Third Scientific Report, and now we are informed that this change has been observed in a second case. But the new case differs in many important matters of detail from the first and therefore it is very valuable in helping to elucidate the factors on which this transformation depends, while the most evident factor in determining the development of a sarcoma from the stroma of the host has been shown to be the duration of the active growth of the implanted carcinoma. Another point which has been established is the immense variety of structure and pathological power exhibited by tumours, though the tumours of any one strain may present a general constancy. Two tumours apparently identical histologically may differ widely biologically. The constancy with which the various tumours retain their individual peculiarities shows that from the epithelial cells of one and the same organ many distinct kinds of malignant new growths may arise. This is fully in accord with the observations of the surgeon and the pathologist, who have noticed the immense clinical differences between two malignant growths which were histologically almost identical. The experiments have shown that these differences, though in part due to the constitutional differences of the hosts, are also in great measure the result of individual differences in the growths themselves. The most striking work, from the point of view of the prevention or cure of cancer, has been that on the manner in which animals may be rendered immune to the inoculation of malignant growths, and, as was shown in previous reports, both cancerous and normal tissues can be employed to effect this. But recent experiments have demonstrated that cells which have been killed or disintegrated in any way, as by chemical poisons or by physical agencies, such as heat or crushing, have lost entirely their power of conferring resistance. This is in marked contrast to what is seen in the case of diseases due to infective micro-organisms. In this connexion the action of radium upon normal and cancerous cells is of special interest, for if either be exposed to radium for an interval insufficient to cause any structural alteration in the tissues which is recognisable either by the eye or by the microscope, the tissues are found to have lost all power of growth and of conferring immunity. As up to now the parallel behaviour of normal and malignant tissues in these

respects seems to exclude the probability of radium having a selective action on cancer tissues, it is well to moderate the hopes as to the possible therapeutic value of radium.

We entirely approve of the attitude adopted by the Fund towards a cancer census, for the data on which such a census would be founded are untrustworthy, and we are interested to see that the French Association for the Investigation of Cancer has come to the same conclusion. The Fund has been much assisted by the willingness with which Dr. J. TATHAM has placed the resources of the General Register Office at its disposal with a view to promote the attainment of greater utility and accuracy in the statistics of cancer, but there is necessity for great completeness of the data of mortality before any useful comparisons can be made between the figures of different countries. With the question of affiliation with the International Society for Cancer Research the Imperial Cancer Research Fund has also dealt wisely. The International Society is an association founded in Berlin, and it is intended to forward the holding of international congresses at which the facts and problems connected with cancer may be discussed. It was mentioned in the last annual report of the Imperial Cancer Research Fund that it had been decided not to join this society, even though the offer was made that the first international congress should be held in London. Efforts have been made to persuade the Fund to reconsider its refusal—indeed, His Majesty the KING was presented with a petition by the International Society asking that as patron of the Imperial Cancer Research Fund he would have this decision of non-participation altered—but the policy of the Fund remains constant. It is somewhat important that the attitude of the Fund should be understood, for those unacquainted with the facts may hastily conclude that it results from some want of willingness to coöperate with other countries. In the first place the Fund has always done its utmost to assist other workers, both in this and in foreign countries. To this end it has supplied material to many laboratories both at home and abroad—in fact, to more than 30 different laboratories in foreign countries; and a large number of foreigners have been received into the laboratories of the Fund in London. The staff of the Fund is already doing its utmost to assist international workers in the investigation of malignant disease. Dr. E. F. BASHFORD, the director of the laboratory of the Fund, and his committee are, however, agreed that the time has not yet come for an international congress on cancer. The facts requiring a congress for the unanimous recognition of their importance have still to be discovered, and much more good at present can be done by active coöperation in the distribution of material than by any congress. Inasmuch as the Imperial Cancer Research Fund is representative, by its executive and other committees, of some of the most important public bodies of this country, any congress held in London under such auspices would excite great anticipations on the part of the general public, which would not be fulfilled by the results. A premature congress can only do harm; but when the time is ripe, no society will be more anxious to coöperate with other nations than the Imperial Cancer Research Fund.

An Outbreak of Cerebro-spinal Meningitis.

ONE of the curious features of infective diseases is their tendency to periods of waxing and waning intensity, the causes of which are at present singularly obscure. In the case of the rarer epidemics the periods of prevalence afford special opportunities for the study of the nature of the maladies, and it is important that the occasions offered should be utilised to the full. A disease which in recent years has presented signs of increased activity, both in this country and in other parts of the world, is cerebro-spinal meningitis, and our knowledge of this affection has distinctly increased as a result of the studies to which it has been subjected by many observers. A recent contribution of considerable interest has been made by Dr. DAVID J. MORGAN in a pamphlet embodying an account of an outbreak of "spotted fever" which occurred in Swansea during 1908.[1] Dr. MORGAN raises several points worthy of more extended investigation. The whole number of cases with which he deals amounted to 63, and short clinical notes are given of all of them. The male patients outnumbered the female, as is usual in this affection, by 37 to 26 cases. Rather less than half of the whole number presented the peculiar rash from which the appellation "spotted fever" arises; but it must be borne in mind that typhus fever is also known by this name, and that the two maladies were not distinctly separated one from the other in days gone by. Hence it would be better, we think, to abandon this term for cerebro-spinal meningitis, the term being really more suitable for typhus fever, where the form of exanthem is much more constant. It is generally supposed that infection in cerebro-spinal meningitis is carried by the air and that the germs are inhaled by patients, the throat, nose, and tonsils being the portals of entrance. Dr. MORGAN'S observations do not bear out this supposition. Indeed, he found that cases of apparent direct infection were rare, only three instances occurring in which more than one member of a household suffered. The distribution would seem to be more like that of enteric fever than of immediately contagious diseases, such as scarlet fever or measles, and Dr. MORGAN suggests the alimentary canal as the portal of entry, supporting his view on the severity of the abdominal symptoms encountered, on the occurrence of necrotic areas in the liver, and on the constant enlargement of the abdominal lymphatic glands seen after death.

The resemblance presented by certain cases of cerebro-spinal meningitis to enteric fever and the difficulties in diagnosis which may result are perhaps not generally recognised. Dr. MORGAN even finds that the serum of these patients may agglutinate typhoid bacilli in a dilution of 1 in 50, a phenomenon which would be looked upon as a positive reaction to Widal's test. Three cases out of five tested did so in his experience, and a fourth gave a positive reaction in rather less dilution. He suggests, indeed, that cases of cerebro-spinal meningitis have, on the

[1] An Account of an Outbreak of Spotted Fever (Epidemic Cerebro spinal Meningitis) which occurred in Swansea during 1908. By David J. Morgan, M.A., M.D., B.C.Cantab., D.P.H.Lond., F.C.S., Medical Officer of Health of Swansea, &c. Swansea: South Wales Post Newspaper Co., Ltd., High-street. 1909.

strength of this peculiarity, been called enteric fever at various times, and quotes published instances apparently illustrating this source of error. It is of considerable importance that further light should be thrown on the frequency with which this serum reaction does actually occur, and we sincerely hope that those who have the opportunity of studying cases of cerebro-spinal meningitis will pay attention to this point and record their experiences. Apart from this, and from the gravity of the abdominal symptoms, in a certain proportion of cases there should not be any great difficulty in distinguishing the two affections. In cerebro-spinal meningitis the onset is invariably sudden, as is well brought out by Dr. MORGAN'S report, and the pain in the head is excruciating in character, not the dull frontal headache of enteric fever. Stiffness in the neck and retraction of the head are noted in over 90 per cent. of the cases of cerebro-spinal meningitis, and actual opisthotonos was recorded in 73 per cent. of patients. A further assistance in diagnosis is afforded by the occurrence of Kernig's sign—the stiffness of the muscles at the back of the thigh rendering it impossible to extend the leg when the thigh is flexed to a right angle with the trunk. Lastly, the examination of the fluid obtained by lumbar puncture will almost always lead to a correct diagnosis. It varies, it is true, considerably in different cases, from a thick creamy pus to almost clear straw-coloured fluid, but the meningococcus is usually to be found without difficulty.

An interesting question with regard to treatment is raised by Dr. MORGAN, who was struck by the extraordinary divergence in the rate of mortality among cases treated respectively at home and in the isolation hospital at Swansea. Whereas 93 per cent. of the former cases died, in the hospital the death-rate was only 44 per cent. He attributes this remarkable difference to the fact that cases in the hospital were treated by lumbar puncture as a routine measure, whereas when home treatment was carried out members of the patient's family often objected to this procedure. No serum was used as a remedy throughout the epidemic, and Dr. MORGAN is inclined to attribute the amount of success which has been claimed for serum-therapeutics in this disease to the fact that the use of this remedy necessitates a preliminary lumbar puncture, to which, and not to the serum, the patients' recovery is due. At present we must conclude that there is not sufficient evidence available to decide as to the value of serum in cerebro-spinal meningitis. The remedy has not been very long introduced into practice and several brands of serum are prepared, the comparative efficacy of which has not been determined. We are therefore not prepared to admit that Dr. MORGAN'S experience by itself can be allowed to counterbalance such reports as have been made by others in this respect. Nevertheless, he makes out a good case for careful investigation as to the amount of good which is to be attributed to the serum and to the mere withdrawal of spinal fluid respectively. So far as we are aware, no harm has ever been traced to the injection of serum, so that there is no reason to feel reluctant to make trial of it. As the withdrawal of the spinal fluid will presumably be followed by the exudation of a fresh supply to take its place, it would be of interest to compare the bacteriolytic and opsonising values of the fluid withdrawn with those of the serum supplied for treatment. If this were done in a fair number of instances, some theoretical inferences might be drawn as to the probable value of serum as a local dressing for the spinal cord and brain, since it is as a local application that it has been found useful, authors being apparently agreed that ordinary subcutaneous injection is not of any value in this affection. Be this as it may, we congratulate Dr. MORGAN on the careful observation which he has made of the epidemic which came under his notice, and hope that his report will be widely studied in order that the points which he has raised may be investigated by others, and that advances may result in the diagnosis and treatment of one of the most fatal diseases which afflict European nations.

The Food of the Soldier

FOR some time past a War Office committee has been considering the various questions concerning the health of the soldier produced physiologically by his food, training, and clothing, and as this committee is composed not only of military officials of great experience, such as Surgeon-General Sir ALFRED KEOGH, Director-General of the Army Medical Service, Surgeon-General Sir T. J. GALLWEY, Colonel S. P. ROLT, inspector of gymnasia, and others, but also of scientific men such as Sir F. TREVES and Dr. J. S. HALDANE, its conclusions deserve careful consideration at the hands of all interested in the well-being of the army. The third report of this committee has recently been issued, dealing with the oft-discussed question of the soldier's food. The report itself is short, consisting only of a dozen pages, but it is accompanied by six appendices, of which the first four contain details as to the analysis and packing of various brands of tinned meats supplied to the army by Major W. W. O. BEVERIDGE, R.A.M.C., assisted by Captain H. B. FAWCUS, R.A.M.C., and Major C. E. P. FOWLER, R.A.M.C. The fifth appendix by Major BEVERIDGE deals with the composition of emergency rations; and the sixth gives a useful statement of the various rations supplied to foreign armies, compiled by Lieutenant-Colonel W. G. MACPHERSON, R.A.M.C.

The report itself deals chiefly with the quantity, nature, and variety of the soldier's food under ordinary conditions—that is, his peace ration—and the arrangements that exist for his messing. From time to time various criticisms have been passed on the amount and kind of food supplied to our troops, generally more or less unfavourable. These comments have sometimes been the outcome of zeal for the soldier's welfare rather than of knowledge as to what is actually done for him, or, indeed, as to what work he himself has to do. It has often been supposed that he is much underfed, the assumption being that what is called the "ration"—i.e., a pound of bread and three-quarters of a pound of meat—is all the food that he is provided with under ordinary conditions in barracks in this country. In addition to this, however, he has a "messing allowance" of 3*d.* a day, which is expended by the commanding officer of the regiment or unit, to the best advantage, in the purchase of vegetables, cheese, materials for puddings, and the like, as

well as various articles that go to make up a breakfast menu, such as bacon, eggs, fish, and oatmeal. In any properly managed regiment the soldier gets a substantial breakfast, a meat dinner with two vegetables, and on most days of the week a pudding or cheese, as well as a tea meal with bread and cheese or butter. At supper-time he can always procure a meal in the regimental institute for 2*d*. or 3*d*., and in some corps a light supper of soup and bread, or the like, is provided gratis. The committee have worked out the food values of the various meals supplied in four different corps. These comprised a cavalry regiment, an English infantry battalion, a Scottish battalion, and an infantry depôt. There was not much variation between these different supplies; reckoning the food value in Calories per day per man, the dietaries supplied gave averages of 3478, 3340, 3248, and 3409 for the units in the order just mentioned. On an average for the whole four regiments, the protein supplied daily was 133, the fat 115, and the carbohydrates 424, stated in grammes. The committee have taken ATWATER'S diet for men doing moderate work—viz., one containing 125 grammes of protein and affording a total energy value of 3500 Calories, as the standard for comparison—and find that though the protein supplied in each case is sufficient, the average Calorie value does not quite reach 3500 in any of the four dietaries examined. But they point out that "this dietary is nearly always supplemented by food bought for supper at the canteen or elsewhere, and the pay of all soldiers is now sufficient to enable this to be done without hardship. The amount thus bought probably brings up the average energy value of the food to fully 4000 Calories, and at the same time gives elasticity to the diet, as each man can select the quality and amount of food which suits him." There can be no doubt that it is in practice wiser not to provide all the dietary according to regulation, but to allow a certain amount of individual choice. The soldier's pay is amply sufficient to enable him to spend 3*d*. or 4*d*. a day on extra food, and it has been found to be the case that he does actually, on an average, do so in the regimental institute. One important recent improvement is noted by the committee. The Army Council has now granted the messing allowance of 3*d*. a day to recruits as well as to trained soldiers. These newly enlisted "growing lads" have often been on short commons for a considerable time before enlistment and need feeding up to enable them to get through their work properly. Various barracks and depôts were visited, and it is reassuring to learn that, from an examination of the articles of food supplied, the cooking arrangements, and the messing books, the committee believe that, "taking into account the extra food which the British soldier is now well able to buy when he requires it, he receives, during peace, sufficient food; and ..... the quality and variety of the food are satisfactory." There is, we believe, no fixed scale applicable to warlike operations generally in the British army, each campaign being dealt with according to the circumstances of the country and climate, and modifications being continually introduced as a result of experience up to date. The committee analysed the South African war ration, taken at its minimum, and give its nutritive composition as: protein, 138; fat, 105; carbohydrate, 528, in grammes, producing in all 3903 calories. This is said to have been the minimum, and from all accounts it was certainly very often supplemented by fresh meat, grain, &c. The Calorie value is less than that of the Japanese war ration in Manchuria (4343) or that of the Russian army in the same campaign (4891). The committee consider that for men engaged constantly in marching and fighting, probably 3900 Calories would be insufficient unless supplemented from other sources. They recommend that experimental observations should be made on this point. This is an important matter which appears to need determination.

In regard to the arrangements that are made for messing the troops, the committee speak favourably of what is known as the "restaurant system." As originally introduced several years ago, this system was intended to give a much greater variety of choice in the food provided and to improve the manner of serving it, so as to make the meals more appetising and attractive to the soldier. It does not seem that in its entirety it has proved practicable to any great extent, but in a modified form the system is now in use in many regiments and depôts. Instead of the bare tables, coarse cookery, and wastefulness of the old barrack-room dinner, in very many regiments nowadays the men sit down to tables provided with a decent table-cover (generally of American cloth) and furnished with cruet stands, vegetable dishes, and so on. The joints are carved by trained carvers, so that not only is there much less waste, but the food is served in a more appetising way. There is also much greater variety in the cooking methods; two vegetables at least are provided, and nearly every day pies or puddings of some kind. This forms a great contrast to the old primitive ways, universal until some ten years ago, when the joint of meat was hacked about by the man in the mess who had the strongest wrist. The waste was then excessive, and no attempt was made to render the dinner, or other meal, anything but a hurried gorge, adjournment being made to the canteen as soon as possible to assuage thirst. Of late years the custom has been introduced of allowing beer and mineral waters to be served with the dinner meal; this practice has been found not only not to increase beer-drinking, but even to diminish it (the canteen being less resorted to), and has therefore tended towards temperance. It has been much appreciated by the men, and the committee recommend the general adoption of the practice.

Coming to the appendices the report by Major BEVERIDGE on the composition of tinned meats contains many observations of interest. Considerable variation, for instance, was found to exist in the composition of individual samples, the fat in corned meat tins being sometimes as low as 7 per cent., and sometimes as high as 60 per cent., reckoned on the dry contents. The committee, after experimenting on their own proper persons, conclude that meat with less than about 10, or more than about 15, per cent. of fat, is unpalatable to most men, from which it appears that more care should be taken in averaging the contents of the tins at the time of preparation. A curious point that has long puzzled manufacturers and storekeepers in charge of tinned-meat supplies has now been elucidated by Major BEVERIDGE'S experiments; tins of meat that have passed the tests applied by the makers

and have kept good for months or even years, sometimes suddenly become blown and unfit for use. This occurrence could hardly be due to injury of the tin through rust, as, if so, the gas produced by putrefaction, consequent on entrance of air organisms, would find its way out and no blowing would result. Major BEVERIDGE, and with him Captain FAWCUS, have found that an organism may be present in the meat at packing, may not be destroyed by the so-called sterilisation, may remain inert for long periods if the tins are stored at a low temperature, and finally, may develop if the temperature reaches 37° C., or thereabouts. This bacillus is non-pathogenic to animals, but decomposes the meat and renders it unfit for consumption. As it does not develop much below the body temperature, meat might be contaminated by it and yet be kept for months without showing signs of decomposition or blowing if stored in a cool place, neither would the temperature of the "warm room," in which manufacturers deposit tinned foods for a short time as a testing chamber, be sufficient to cause growth of this bacillus. But if taken to a hot climate the whole consignment might speedily become unfit for use. The recommendation is accordingly made that the temperature of the fluid in which canned-meat tins are sterilised should be raised to 120° C. (248° F.), and that this should be kept up for one hour. This is a higher and more prolonged sterilisation than is, we believe, usually the practice at present, but in view of the observations of Major BEVERIDGE and his collaborators appears to us to be justified. It is satisfactory to learn that no boric acid or other preservative was found to be present in any of the tinned-meat samples, though the nitrates, derived from the pickling fluid, were sometimes in excess.

Annotations.

"Ne quid nimis."

THE NEW PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Mr. Henry Trentham Butlin was elected unanimously President of the Royal College of Surgeons of England at the meeting of the Council held on Thursday, July 8th, at the College. This event was generally anticipated, for Mr. Butlin's claims upon the titular leadership of his branch of the profession in this country are very strong. He is well known at home and abroad as an operating surgeon and pathologist. He has held almost every possible post in connexion with his College, he has won the Jacksonian Prize, he has delivered the Hunterian oration, the Erasmus Wilson lectures, and the Bradshaw lecture. But outside the College he has been equally prominent, for in addition to being consulting surgeon to and lecturer upon surgery at St. Bartholomew's Hospital he has been President of both the Pathological and the Laryngological Societies, member of the Senate and Dean of the Faculty of Medicine of the University of London, and Vice-President of the British Medical Association. Mr. Butlin brings, therefore, to his new and important post great experience both in organisation and in the exercise of authority, while his well-known happiness as an orator will stand him and his College in good stead. We offer him our best congratulations.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

THE seventy-seventh annual meeting of the British Medical Association will be held at Belfast on July 23rd, 24th, 26th, 27th, 28th, 29th, and 30th next, under the presidency of Sir William Whitla, Professor of Materia Medica and Therapeutics, in the University of Belfast. Fifteen scientific sections have been arranged and will meet daily from Wednesday to Friday in the Queen's College at 10 A.M.—viz., Anatomy and Physiology, Dermatology and Electro-Therapeutics, Hæmatology and Vaccine Therapy, Diseases of Children, Navy, Army and Ambulance, Hygiene and Public Health, Laryngology, Otology, and Rhinology, Medicine, Obstetrics and Gynæcology, Ophthalmology, Pathology, Pharmacology and Therapeutics, Psychological Medicine, Surgery, and Tropical Medicine. On Tuesday, at 2.30, Sir William Whitla will be inducted to the presidential chair, and on the same evening will deliver the presidential address in the Assembly Hall, Belfast. On Wednesday, July 28th, at 12.30 P.M., Dr. R. W. Philip will deliver the address in Medicine in the library, Queen's College. On Thursday, July 29th, at 12.30 P.M., the address in Surgery will be delivered in the library, Queen's College, by Mr. A. E. J. Barker. On Friday, July 30th, at 12.30 P.M., Sir John W. Byers will deliver the address in Obstetrics in the library, Queen's College. At 8 P.M. a popular lecture will be delivered by Dr. J. A. Macdonald. As the programmes throughout promise particularly interesting discussion, owing to the proposed attendance of men of eminence from foreign countries and various parts of the British Empire, the success of the meeting from every point of view is assured.

THE FEES OF OUR ANCESTORS.

UNDER the above title Mr. D'Arcy Power has recently contributed to *Janus* an interesting little paper on the emoluments of physicians at various periods. With the art of a practised writer he at once arrests his reader's attention by reminding him of two physicians whose custom it was never to receive a fee at all—namely, the "unmercenary" saints Cosmas and Damian. At the opposite extreme comes the fee which Mr. Power has omitted to recall—namely, that received by Democedes of Crotona, who as a prisoner was in the service of Darius Hystaspes at Susa. Darius had dislocated his foot at the ankle-joint and Democedes was called in after the failure of an Egyptian surgeon. His treatment was successful, and he was thereupon presented with two golden fetters, a delicate allusion to his position. Having delighted Darius by asking him "whether he meant to double his punishment," that monarch told him to go through the harem as the man who had saved the king's life. The ladies each gave him a golden vessel piled up with *staters*, so many of which fell on the floor that the slave who conducted him made a handsome fortune by picking them up. He was afterwards called in to treat Atossa the Queen for a mammary ulcer which he succeeded in curing. Such patients, however, as the Great King and his consort do not fall to every man's lot, though in quite modern times the high feudatory princes of India have paid comparable fees. In the Middle Ages men were more mercenary, and Mr. Power gives an amusing quotation from John of Arderne (*circa* 1370) as to the methods of bargaining with a patient. Arderne's highest fee for the cure of fistula in ano was £40 down, a suit of robes, and 100*s.* per annum during the life of the patient. Patients in the Middle Ages were no more

ready to pay their fees than now, and Gilles de Corbeil, a celebrated twelfth century physician, points out in language which must surely strike an answering chord in the heart of the present Chancellor of the Exchequer, that the rich man must pay in accordance with his wealth, though he adds as a saving clause "if his mind is as wide as his purse" then—

"Aggravet hic medicina manum: sumptus onerosos
Exigat: hic positos debet transcendere fines."

In another place he remarks that it is as well for the physician to demand his fee before the patient is well—

"Tutius esse reor, quod certe novimus omnes,
Dum dolet accipere, vel munere posse carere."

Mr. Power concludes his paper with an account of eighteenth century fees. Physicians like Radcliffe and Mead charged a guinea; country apothecaries charged much less and made their money chiefly by the sale of medicine. Mixtures, as Mr. Power reminds us, were sent out as draughts in one ounce phials with a cork which sometimes had one pill in a box stuck on to it. Draught and pill cost 1*s.* 9*d.* As many of our readers will remember, the directions were written on a slip of paper attached to the neck of the bottle, and such a draught in the half light of a sick room bore a ludicrous resemblance to the human inhabitants of a Noah's Ark as manufactured in about 1860, up to which time the custom of separate draughts endured. Readers of Swift will remember the story he tells of Stella. "A quaker apothecary sent her a vial, corked; it had a broad brim and a label of paper about its neck. 'What is that,' said she, 'my apothecary's son?'"

MORTALITY FROM MEASLES.

SATISFACTORY as have been the results on public health and longevity of improved sanitary administration in England and Wales during the last 30 years, there are still many features in our national mortality statistics which, without undue pessimism, clearly point to distinctly preventable waste of life, especially among infants and young children. The weekly returns of the Registrar-General, for instance, have recorded during the first six months of this year no fewer than 6381 deaths from measles in 76 of the largest English towns. Of these deaths it may safely be estimated that more than 90 per cent. were deaths of infants and children under the age of five years. In the corresponding six months of 1907 and 1908 the fatal cases of measles in these 76 towns did not exceed 4596 and 2692 respectively. The exceptional mortality from this disease during the first half of this year has probably been mainly due to unfavourable meteorological conditions, but it is an unquestionable fact that the generally improved sanitary condition of the English population during recent years has not effected any considerable reduction in the death-rate from measles. The annual rate of mortality from measles per 1,000,000 of the English population, which was equal to 379 in the ten years 1871–80, increased to 441 in 1881–90, was 414 in 1891–1900, and has been 311 in the first eight years of the current decennium. It should, moreover, be borne in mind that these death-rates from measles, calculated on the population at all ages, understate, for comparison in the several periods, the present true rate of mortality from this disease, if corrected for the recent marked decline in the proportion of young children in the English population. It cannot be doubted that the case-mortality of measles mainly depends upon watchful nursing and care during convalescence; it is therefore not surprising to find that measles mortality is, to a great extent, confined to those classes in which careful nursing and treatment are neglected or are practically impossible. The class-mortality statistics issued by the Registrar-General for Ireland, relating to the Dublin registration area, throw valuable light on class-mortality from measles, and suggest the desirability for similar statistics on a larger basis. During the two years 1907–08 the deaths from measles in the Dublin registration area were 304, of which only 23 occurred among the professional, independent, and middle classes, estimated to number 104,624 persons of all ages, whereas the number occurring during the same period among the general-service class (excluding artisans and petty shopkeepers), consisting of an estimated population of 154,279 persons, was 223. The calculated death-rate from measles in these two sections of the Dublin population during 1907 and 1908 was more than seven times as high among the general-service class as among the professional, independent, and middle classes. The deaths from measles in England and Wales during the past eight years of the current decennium have averaged more than 10,000 per annum, and will this year very considerably exceed this number. It is impossible to doubt that the large majority of these deaths are distinctly preventable by careful nursing and after-treatment. Without venturing entirely to attribute the remarkable decline of the mortality from scarlet fever in recent years to hospital isolation and treatment, the experimental trial of hospital isolation and nursing for measles naturally calls for serious consideration. In connexion with this subject it is interesting to note, in the recent appeal by the London Fever Hospital for financial support, that the hospital treatment of measles has recently been adopted at that institution. The result of this experiment cannot fail to be helpful in the consideration of the desirability for the creation of facilities for the hospital treatment of measles as a possible means of checking the present waste of child-life caused by the persistent mortality from this disease.

THE REPORT OF THE LADY ALMONER TO ST. THOMAS'S HOSPITAL.

NOT long ago we devoted a leading article to a consideration of the report made by Miss Norah B. Roberts to the recent Poor-law Commission upon her inquiry into the extent of hospital abuse in London, and we mentioned her recommendation that fully trained lady almoners should be appointed at all hospitals in order to limit its occurrence as much as possible.[1] The report of Miss A. E. Cummins, lady almoner to St. Thomas's Hospital, upon the work of her department from March, 1908, to March, 1909, affords a timely confirmation of Miss Roberts's opinion, and is a document which should receive wide circulation amongst other hospitals and careful study by those responsible for their management. The lady almoner's department at St. Thomas's was instituted "to check the abuse of the out-patient department by patients who are either in a position to pay for treatment or who are too poor to benefit by any assistance other than that obtainable through the Poor-law; to ensure as far as possible that all out-patients to whom treatment is granted shall benefit to the full by that treatment; and that no time, consideration, or money shall be withheld, either by the patient or by charitable agencies, to enable the patient to coöperate with the hospital in carrying out the prescribed treatment." The work has now been established for four years and has been extended considerably since its inception, its plan being that only as many cases as can be dealt with thoroughly shall be undertaken at all. No routine inquiry concerning wages, rent, and so on, has been found of value in adjudicating upon the suitability of an applicant for hospital relief. In order to carry out the thorough personal investigations that are necessary the coöperation of existing charitable agencies has been secured, a plan which it will be remembered was recommended by the recent Commission for the solution of

[1] THE LANCET, May 29th, 1909, p. 1534.

other problems in poor relief. Miss Cummins is gratified at the help that she found available in this work, the demand for which almost seems to create the supply. It has been possible to visit 2942 patients at home as against 170 during the first year of the work, which, although it only represents a fraction of the patients attending the hospital, shows a gratifying and progressive vigour in the life of the department. Particular pains are taken not to multiply the number of visitors to any one family, for the reason given epigrammatically in the following words: "The industrious woman has no time to receive constant visits from church, chapel, rent collectors, and charitable agencies. The idle may be quite willing to pass their time in this way, but should not be encouraged to do so." A chief object of the work is to help people to help themselves, and it has been found in several cases that by inducing a breadwinner to save up money to buy a surgical appliance or extra nourishment for his wife the habit of saving has been established, to remain after the immediate necessity has passed Special efforts are directed to the provision of such necessities of treatment as proper food and fresh air, for it is recognised that a vast amount of the skilled advice given to hospital out-patients must necessarily be wasted if they are left to their own devices to carry it out; but each is expected to contribute to his cure according to his means. "Cases," says Miss Cummins, "are not classified as deserving or undeserving ..... but as helpable or not helpable. Most cases prove helpable in the long run, though not always on the lines first expected." A special section of the report is devoted to phthisical patients, and a system for their management has been evolved from a study of the family life and progress of 200 cases. When the home conditions are very deplorable the case is referred to the Poor-law authorities, a procedure which should not be neglected by hospital almoners. In more suitable cases other relief agencies are asked to provide extra food in the homes of patients, who are taught the virtues of fresh air and the evils of spitting. All very early cases have been sent to sanatoriums, but an encouraging experiment has been made in one instance by the erection of an open-air shelter in Camberwell, and it is hoped that the plan may be extended for the treatment of patients unable to leave their homes. The report of the cases convicted of hospital abuse affords striking reading; we quote the most flagrant. "A. B., medical casualty, 28, married man, said he rented a flat at 10*s*., and earned £2 as a clerk. His wife looked after the two children and did the housework. No club." He was refused medicine on the strength even of this statement, and a letter was sent to a private practitioner who had attended him and who answered: "A. B. is in partnership with his father in trade. To my certain knowledge the father gave £14,000 for an estate and a freehold site for a church, &c., for which he was publicly thanked by the bishop. A. B. lives very comfortably in a rather small house, where they keep a maid-of-all-work and an old woman to look after the children." It would be interesting to know whether such a despicable application for relief as this comfortably situated person made to the hospital is actionable; certainly it seems to be an attempt to obtain money—or its equivalent—under false pretences. Fortunately, such cases by no means represent the majority of out-patients, many of whom "overstate rather than understate the family incomes, possibly from a feeling of pride." Some difficult cases were met with of patients going from one hospital to another, causing deplorable waste. In more than one case a lover of medicines was found to be attending two institutions simultaneously for the same disease. The last part of this instructive report deals with the help given by the lady almoner's department to the maternity department, help which included a limited number of free meals to nursing mothers. Miss Cummins deprecates a wide extension of this plan: she "cannot fail to acknowledge the want of backbone that is increasingly evident amongst the working-classes," for the charitable aids, the free meals for school children, and other free gifts to the poor are coming to be regarded as the working-man's right. We feel constrained to admit a substantial foundation for her complaint and commend to other hospital authorities the system upon which her department is worked—namely, to subsidise and not to supplant the efforts of the poor on their own behalf, with the object of fostering their spirit of independence whilst ministering in a rational manner to their infirmities.

THE TUBERCULOSIS CRUSADE IN WESTERN IRELAND.

IN "A Holiday in Connemara" Mr. Stephen Gwynn, M.P. for Galway and a well-known *littérateur*, has put on record his impressions of the work of the Gaelic League in the "Crusade against Tuberculosis" among a section of the Irish population peculiarly liable to the inroads of disease. "One by one," he says, "the young and strong are being smitten; and the disease (tuberculosis) is being cruelly multiplied by others again, who, having gone to the towns of America or Great Britain, with lungs adapted by generations of heredity only to the soft moist air of Western Ireland, have fallen an easy prey to the white pestilence, and, broken down in health, come home for a few years, to cough out their lives in poison among their nearest friends; to linger out in cabins where no window is made to open, where folk sleep terribly crowded, and where the earthen floors become perfect nests of the bacilli." This passage was written as lately as last autumn, but it is cheering to reflect that then and for some time past the most thorough prophylactic measures had been initiated in Connemara and the districts of the neighbourhood. Fascinating is Mr. Gwynn's account of how Dr. Seumas O'Beirn of Tawin, himself a Gaelic speaker, came to the conclusion that typhus fever and tuberculosis seemed to be endemic in those districts where Irish alone was spoken, and where consequently practical English ideas on health had not penetrated into the popular consciousness. To him apparently belongs the honour of having first diverted the energies of the Gaelic League, which aims at reviving and using the Gaelic tongue, into a practical channel, for it was he who first conceived the eminently sensible idea of lecturing on health and anatomy in Gaelic—as Erse is universally called in Ireland—to those Irish peasants to whom English still remains a foreign language. Gaelic, as Mr. Gwynn points out, is as yet a language so new to technical phraseology, that explanation must of necessity be made in the very simplest terms. But Dr. O'Beirn announced none the less a series of lectures on the human body and the origins of disease, to be delivered in the Irish tongue and illustrated with lantern slides. He began his course in Kilmilcin in the Joyce Valley, and the quick-witted peasantry crowded to hear him, and were emulous to pass examinations in the laws of health. Among other things, probably, they were taught that windows should not be mere panes of glass, but should open. Indeed, we understand that the value of fresh air, in a country rich in that commodity, was impressed at every turn on the eager students who thronged to the Kilmilcin lectures. Shortly afterwards the Gaelic League took up the cause, a distinguished Dublin surgeon having invited their assistance in an inaugural sessional lecture at one of the Dublin hospitals as lately as last autumn. The Celt is so intelligent that there is no limit to the possibilities of reform when he sets his heart upon attaining it. The appeal to the Celtic imagination is being made in more ways than one. Dr. O'Beirn, for instance, has written and sustained the leading part in a propagandist

medical play ("An Dochthuir"), which deals amusingly with the difficulties encountered by an English-speaking medical man in an Irish-speaking round of practice. The drama has been acted by local players in Connemara. An ingeniously conceived vehicle for the dissemination of hygienic doctrine, it might well be imitated by all those who fight unenlightenment in any rural district of England.

SALT AND SMOKE.

FOR some time past the public taste has been gradually growing in favour of the mild-cured article, with the result that at the present moment strong salted or smoked foods are not in evidence as they used to be and are rarely called for. The ham and the bacon must be mild cured, and even butter must be fresh and absolutely without a salt flavour. This preference for the so-called mild-cured article has undoubtedly furnished an excuse on the part of caterers for the use of stronger antiseptics than salt or smoke, and antiseptics which are, comparatively speaking, tasteless, or at any rate which add no special flavour to the food. The old-fashioned antiseptics, salt and smoke, are thus sharply distinguished from modern antiseptics, inasmuch as the former not only preserved food but served also as condiments. In the case, however, of certain preserved foods, although the salt may be left out, the smoke must be retained, as otherwise the food loses its individuality. The kipper, for example, is inseparable from a smoky flavour, as is also dried haddock or dried salmon. We have heard that a "smoke essence" is employed to impart the kind of palatability associated with properly smoked food, but such practices, coupled with the use of antiseptics, would readily account for the regrettable fact that cured articles of diet are not now up to their former standard. Assuming that the mild-cured article, and as a particular example we may choose butter because it is an indispensable article of the dietary, is free from objectionable antiseptics, it is still left more helpless against the attacks of micro-organisms than were the old-fashioned cured foodstuffs. Experiments have, in fact, shown that the addition of salt to butter is a factor of great importance from the point of view of germs. In unsalted butter the growth of micro-organisms is more vigorous and continues for a longer time than is the case with salted butter. Mycelial fungi if present disappear entirely after a while in salted butter, while in fresh or unsalted butter they multiply rapidly. The quality of butter appears to be improved by a small percentage of salt (say 2·5); it encourages the development of a flavour which makes butter an attractive article of food and it acts as a safeguard. Altogether there would appear to be certain valid reasons for thinking that the public preference for the mild-cured article may be an error of judgment, and there certainly is much to be said in favour of the old policy of preserving foods by salt and by smoke.

THE NATIONAL ASSOCIATION FOR SUPPLYING FEMALE MEDICAL AID TO THE WOMEN OF INDIA.

As their religion will not allow them to be attended by a male, the caste prejudices of India prevent a very large proportion of the female population obtaining medical aid in any of the numerous hospitals and dispensaries, the majority of which are State institutions. As the Government of India could not see its way to provide female aid, Lady Dufferin, during her husband's tenure of the office of Viceroy of India, nobly stepped into the gap and created a fund, which has been since known as the "Countess of Dufferin's Fund," for supplying female aid to the women of India. In the twenty-fourth annual report for 1908, just published, the association shows steady and satisfactory progress in providing relief not only for purdah but other women. The present president, Her Excellency Lady Minto, has during the year under review inspected many of the hospitals under the Fund, and has interested herself in representations made by the Association of Medical Women in India (which were referred to in THE LANCET of March 13th, p. 780), whereby they claim a more independent control of zenana hospitals. The central committee cannot at present, however, hold out any hope of a so-called "medical service" being formed under which lady doctors would enjoy the privileges of pension and other advantages which are attached to the regular Government services. The association has now in its employ 52 lady doctors of the first grade (qualified for British Medical Register), 87 of the second grade (Indian qualifications), and 529 hospital assistants, or third grade. Of female students at present training, 22 European and native ladies are shown as training for the full M.B. course, 91 as assistant surgeons, and 101 as hospital assistants, nurses, midwives, and compounders. The backbone of the whole Dufferin Fund is medical tuition; it cannot get on without medical women and its numbers are limited. But the work done is exceedingly good, and the present report shows a grand total of slightly under 2,250,000 patients (women) treated in 1908.

THE WET SUMMER.

As though exhausted by its unusually brilliant efforts of the two months preceding, the weather was a dismal failure in June and has been no better in the first part of July. Never since meteorological records have been systematically recorded has the opening of summer been so gloomy and cold, and seldom so rainy as it was during last month in London and some other parts of southern and south-eastern England; while over the kingdom generally, although the lack of warmth and sunshine was less striking in relation to the average, the month ranks as one of the most unsatisfactory Junes for many years. The chief cause of the great chilliness was the persistent predominance of winds from some point between north-west and north-east, accompanied by a very cloudy or densely overcast sky. The natural result of this ungenial combination was that while the temperature during the night-time was only slightly below the average, nearly all the days were remarkably cold for the time of year. The thermometer approached the normal on extremely few occasions. The normal maximum shade temperature for June in the south and south-east of England is between 65° and 70°, but, as will be gathered from the subjoined table, the mean of last month's maximum readings was only about 60°. Over by far the greater portion of the kingdom the 70° mark was not reached at all, and even in London, where a warm June sends the thermometer up to 70° or above day after day, it was only touched twice—on the 17th and 19th. No June except the miserably cold and wet one of 1879 has had such a low maximum in the metropolis for at least 40 years. Had the sky been fairly clear the temperature would doubtless have been considerably higher in spite of the cold winds, but it was so persistently clouded that the sunshine in London and some other parts of the south-east was the most meagre recorded in June since the automatic instruments were established in 1881. After Westminster had enjoyed 220 hours of the most brilliant sunshine in April and 297 hours in May, the June figures dropped to 91 hours—from an average of between nine and ten hours per day to one of about three hours. Such an extraordinary difference as that between May and June is probably without parallel in this country. The deficiency of sunshine was also very great in the Midlands and along the south coast, but at Jersey it was very trifling and not particularly large in the north-west of England and in North Wales. Manchester

was not so badly served by the sun as Westminster. Over the greater part of England the month was much more rainy than usual, but the quantity varied a good deal, and some spots received less rain than during a normal June; at Buxton there was nearly an inch less. To enable a month to give such abnormal weather as did the one under consideration the positions and routes of the cyclones and anticyclones must also be abnormal. Last month the barometrical conditions were, in fact, generally quite different from those usually obtaining at this time of year. During an average June the space between the Azores and France or Germany is covered by a vast anticyclone of varying intensity, while the large cyclones from the Atlantic travel in a general easterly or north-easterly direction with their centres either between Scotland and Iceland or to the northward of Iceland, thus causing a flow of air over this country mainly from the south-west or south. During almost the whole of last month, however, there was an anticyclone over the Icelandic region, which frequently extended southward over the Atlantic off the west of these islands, and with such a distribution of barometric pressure the wind over this country must necessarily come from the Polar regions. Why such a displacement of the high and low pressure systems should sometimes occur is at present, and will probably remain for a long time yet, a meteorological mystery.

Stations.	Mean maximum temperature.	Mean minimum temperature.	Mean temperature for month.	Difference from average.	Days with rain.	Total fall.	Difference from average.	Number of hours of sunshine.	Difference from average.
	°	°	°	°	*	ins.	ins.		hrs.
London (Westminster)	62	49	55·5	−4·4	19	4·02	+0·81	91	−76
Bath	61	49	55·2	−4·5	16	2·75	+0·43	131	−55
Harrogate	60	44	52·0	−3·5	14	4·03	+1·58	134	?
Buxton	58	45	51·2	−3·4	11	2·49	−0·93	126	?
Nottingham	61	49	54·8	−3·5	16	2·32	+0·15	120	−77
Liverpool	59	48	53·5	−4·1	15	2·54	+0·37	160	?
Manchester	60	47	53·8	?	11	2·02	−0·85	106	?
Llandudno	60	49	54·1	−3·5	13	1·52	−0·45	188	−16
Southport	59	47	53·1	−3·8	13	2·61	+0·45	180	−27
Torquay	60	50	54·8	−3·8	18	3·35	+1·19	17	−56
Jersey	63	53	57·6	−1·4	14	3·58	+1·52	234	−7
Bournemouth ...	60	48	54·1	?	18	4·51	?	145	?
Brighton	60	49	54·5	−4·6	12	2·09	+0·17	144	−83
Margate	60	50	55·1	−3·0	13	2·34	+0·45	130	−56
Yarmouth	58	51	54·5	−2·1	12	2·25	+0·35	161	?
Scarborough	59	50	54·3	−1·3	11	2·04	+0·08	122	−55
Aberdeen	58	48	52·4	−1·6	13	1·51	−0·34	150	−37

* A day with at least 0·01 inch.

DEATH FROM OVERLYING.

THE National Society for the Prevention of Cruelty to Children recently prosecuted a Brighton woman for neglecting her four children, all under the age of 16 years, in a manner likely to cause them unnecessary suffering. The youngest of the children was a baby four weeks old, and the chief ground upon which the society based its case was the woman's drinking habits, and it was alleged that when in such a condition she could not perform her maternal duties properly. The other children, all of tender years, seemed to thrive on their surroundings; and in the absence of any direct evidence of wilful neglect—which the chairman of the bench said must be continuous neglect—the prosecution, after a two-day hearing, failed, the case being dismissed. It goes without saying that in many ways the children must have suffered from a certain amount of neglect, but while the magistrates could not see their way clear to convict they could have at least given the woman a severe caution and a warning as to her future conduct. But she was allowed to leave the court without the slightest admonishment. The sequel must surely have afforded a shock to the complacency of that lenient bench, for nine days later the same woman appeared before the Brighton coroner's court, the same baby, now six weeks old, having been found dead in bed by the side of its parents on the morning of July 8th, seven days only after the police-court proceedings had concluded. Attention was, of course, drawn to the proceedings in the police-court, and the coroner, Mr. J. E. Bush, expressed his astonishment that the magistrates did not censure the woman. Two women gave evidence admitting that the mother of the dead child had given way to drink, but said that she was sober on the night before the morning the child was found dead. This fact seems to have saved the woman from being committed for trial under the provisions of the Children Act, which makes a drunken parent responsible for the death by overlying of a child, for the jury expressed the opinion that the child died from overlying. The death of the child within a few days of the prosecution by the National Society for the Prevention of Cruelty to Children shows that this excellent society was fully justified in its action. There have been many similar cases in Brighton, and only a smart sentence, when evidence is strong, will act as a deterrent. It is among the children of the slothful and the drunkard that infantile mortality exerts its greatest influence.

IMPROVEMENTS AT BATH.

ON July 10th Sir Malcolm Morris was the guest of honour of the Bath corporation, which had invited him to open formally an open-air drinking fountain and colonnade that will enable visitors to take the waters in the Institution Gardens. Sir Malcolm Morris performed his duties, down to the drinking of the first glass from the new source of supply, with enthusiasm for the merits of the Bath waters, for which he professed a personal gratitude, but he also took the occasion to speak very plainly on the supineness in the past of their owners. It was a happy choice which led the corporation to invite a distinguished physician to perform this function, the more especially since the occasion marks the establishment of wise relations between the medical men of the town and the administration of the baths, as is witnessed by a recent election of Dr. R. Carter and Mr. A. L. Mackenzie to serve on the baths committee. This fact was commented upon with approval by the mayor, Mr. W. J. Knight, after the luncheon following the proceedings in the gardens. At the same feast Sir Malcolm Morris did not fear to tell the city of Bath a few home truths about the backwardness of English health resorts in providing attractive accommodation for their visitors, and he did so in terms that the managers of spas elsewhere would do well to take to heart. "If you will take my message, Mr. Mayor and Corporation," said their chief guest, "and are not so slow in your improvements, you will rival the great spas of Europe in a way no other place can do. But you always think, and you talk for hours and hours upon ways and means. ..... You have a duty to perform to the nation and not to your town alone. If your water contains some material of benefit to human beings your duty is to use it. You have all the things to your hand here. Do it, and do it properly and at once. I have nothing to do with Bath and its rates or with your jealousies and squabbles, which I take it exist in every provincial town in the world, but ..... you possess a remedy for the cure of chronic diseases, and yet you don't supply a sufficient amount and

sufficient attractions for the people who should use it." This was, perhaps, the straightest speaking that a luncheon party has ever received from its guest of honour, and we will do the city the credit to say that its corporation received the message in excellent part. The mayor, indeed, pointed out in extenuation that ratepayers had always to be reckoned with, but the enlightened action of the Chamber of Commerce, coupled with the active support of the local branch of the British Medical Association in carrying through the recent improvement, was, he submitted, a good earnest of further advances in the interests of their city. He confessed that he was in agreement with what their guest had told them. We may, perhaps, now hope for such another revival at Bath as was attempted in that city about a generation ago. Even though Bath shall never know again the glories of the eighteenth century, we are assured of the investment value to the city of money spent in the proper development of the spa such as has now been done in the provision of an open-air service of the waters.

A VEGETABLE SOURCE OF IRON.

M. P. J. Tarbouriech and M. P. Saget, in the *Bulletin des Sciences Pharmacologiques* for May, describe some experiments which they have made to find a vegetable drug containing a relatively high proportion of iron. As a result they have been able to show that the dried root of one of the docks, *Rumex obtusifolius*, contains 0·447 per cent. of iron, a proportion greatly in excess of that yet found in any other plant. Further experiments showed that the iron is present in organic combination. It is a difficult matter to isolate and identify such complex substances, owing to the readiness with which the inorganic element is split off, but evidence was obtained that the compound is analogous to the ferric derivatives of the nucleones. These substances, as shown by Siegfried, are present in milk and in the muscles and other tissues of the body, and it is thought that iron, calcium, and phosphoric acid are carried from one part of the body to another in the form of nucleone derivatives. It is believed by many pharmacologists that a large proportion of the iron administered in the inorganic form is not assimilated in the body, and on this account various organic compounds of iron have been introduced into medicine, including the glycerophosphate and the so-called "peptonate" of iron. The administration of iron in the form of a nucleone derivative as present in this species of rumex would appear to offer advantages over the other compounds of iron, and this view is supported by results that have followed the administration of the powdered rumex root by the mouth.

THE RÔLE OF THE PERINEAL BODY IN CHILDBIRTH.[1]

THAT the perineal body *per se* plays a relatively unimportant part in the support of the pelvic viscera has long been recognised by most anatomists. It is not surprising, therefore, to find that cases of complete rupture of the perineum can and do occur without any or with a relatively slight descent of the pelvic viscera. Matthews Duncan long ago called attention to this fact, but as he pointed out quite correctly, rupture of the perineum, although it does not cause prolapse, yet markedly facilitates it. He compared the rôle of the perineum in prolapse of the uterus to that played by it in childbirth, and contended that just as a rigid perineum prevents the escape of the fœtal head so an intact or a partially torn perineum prevents the conversion of a case of prolapse of the second degree into one of complete procidentia uteri. Dr. R. H. Paramore cites Matthews Duncan's conclusions with approval, but would have us believe that the part played by the perineum in childbirth is neither necessary nor good. That it is not necessary he holds to be shown by the occurrence of normal labour in the case of its previous rupture, and that it is not good he maintains because he thinks its presence promotes over-stretching of the pubo-rectalis portion of the levator ani muscle—viz., those fibres which take origin from the back of the pubes, and encircling the rectum, are attached in the middle line in the ano-coccygeal raphe, and so produces marked weakening of the pelvic floor. The muscles inserted into the perineal body are of little importance, comprising a comparatively small bundle of fibres of the pubo-rectalis portion of the levator ani and the internal and external sphincter muscles of the anus. The great stretching that all the structures in the perineum undergo during childbirth is shown by the fact that the distance from the anterior margin of the pubo-rectalis muscle to the fourchette at the time of the birth of the child's head through the vulva measures some five inches, of which the stretched perineal body itself accounts for three inches or more. Dr. Paramore maintains that the tension of these thinned-out perineal tissues determines a forward projection of the fœtal head, and at the same time the plane of the vulvar outlet becoming extremely oblique and approaching the coronal plane, is in this way considerably removed from the plane of the pelvic outlet which is almost horizontal in direction. The posterior extremities of these two planes are therefore at a considerable distance from one another, while their anterior extremities are close together. The actual distance separating their two posterior extremities is usually some five inches. The view put forward ably by Dr. Paramore is that since these apertures are not in planes parallel to one another an ovoid body such as the head of the fœtus passing through them at the same time must, while it is passing through one with its long axis perpendicular to the plane of that aperture, pass with its long axis placed obliquely through the other. From this he argues that when the head is traversing the vulvar outlet with its long axis at right angles to that plane it can no longer be passing in the same and most advantageous manner through the opening of the pubo-rectalis muscle, and therefore this muscle is subjected to an undue degree of stretching. If, however, the perineum is destroyed by tearing, then the forward projection of the head produced by that body no longer occurs, the head does not pass through the opening of the pelvic floor with its long axis placed obliquely to the axis of that plane, and therefore the pubo-rectalis portion of the levator ani muscle is not stretched to an excessive degree. On these grounds Dr. Paramore holds that the perineal body plays an important and pernicious part in the production of over-stretching of the pelvic floor. The argument is an ingenious one, but we think that Dr. Paramore has lost sight of the fact that the head is undergoing a marked movement of descent during the time that extension is taking place. It is not correct to assume, as apparently he does, that the head passes through the two planes, that of the pelvic aperture and that of the vulvar outlet, at the same time; it does not. Indeed, at the time that the suboccipito-bregmatic diameter is engaged in the vulvar outlet, if we assume that the distance from the anterior margin of the pubo-rectalis portion of the levator ani muscle to the fourchette is five inches, as the author allows, the whole head has already passed through the aperture of the pelvic outlet, since even in a greatly moulded fœtal head the distance from the bregma to the chin measures not more than five inches and usually less, while at this stage of delivery the back of the neck, or at any rate a portion of the back of the head well below the level of the occipital protuberance, is in contact with the under surface of the pubes. Unfortunately there are no frozen sections available of the latter part of the second

[1] Vide p. 134 of this issue.

stage of labour which would enable us to determine with certainty the exact relation of the head or of the neck of the fœtus to the plane of the pelvic outlet at the time that it is engaged in the vulvar outlet. Barbour's section of the early part of the second stage does indeed bear out Dr. Paramore's contention, since it shows that the head is already slightly extended, to a greater degree at any rate than during pregnancy, at a time when the forecoming part of the head is only just appearing in the vulva. On the whole, we are inclined to think that Dr. Paramore's hypothesis is a correct one, but at the same time we feel that he has rather over-exaggerated the amount of distension of the levator ani muscle and of the pelvic floor thus produced, and that he regards the action of the perineal body in this matter as more harmful than it is in reality.

CHICAGO CAMPAIGN FOR CLEAN MILK.

THE sanitary authorities of the city of Chicago have been setting a good example in regard to the milk-supply. In 1908 an ordinance was passed prohibiting the sale of milk unless it was obtained from cows that had been tested satisfactorily with the tuberculin test. As, however, such a rigorous measure could not be at once applied, it was decided that for a period of five years milk from cows that had not been thus tested could be sold in Chicago if it was pasteurised. This latter stipulation was all the more necessary as the sanitary condition of many of the dairy farms is very defective. The water from the wells supplying these farms has been analysed, and when found to be contaminated the milk-supply was stopped until a new and safe well had been dug. Farmers are also advised how to conduct their work on sanitary lines and are compelled to notify cases of disease occurring in or about their farms. During the present year there has been a re-inspection of all the farms, and wherever the orders of the Chicago health department have not been carried out notice was served that the supply of milk would be cut off in five days. This delay of five days enables the city dealers to obtain a supply from another source. The city authorities appeal to these dealers and to the general public to help in bringing pressure to bear upon the dairy farmers, and urge that everyone should make inquiries as to the place whence the milk is obtained which it is proposed to buy. Thus during the month of March last the milk from 60 different farms had to be kept out of the city because the regulations of the health department had not been observed. But it is not only necessary to see that the milk introduced into a town is wholesome when it arrives, measures must also be taken to prevent its contamination while exposed for sale and after it has been purchased. In regard to the latter, advice is given throughout the poorest districts in Chicago to indicate how ice-boxes can be made in which a bottle of milk can be kept at such a small cost that the poorest can afford the outlay. Any box about 18 inches long and 13 inches wide and deep will do. In the centre is placed a circular pail or can 8 inches in diameter which is high enough to hold a quart bottle of milk. Round this pail there must be a cylinder to protect it and so that it may be lifted in and out. In the pail the milk-bottle stands surrounded by ice; below and all round the box is filled up with sawdust. The addition of a little soda will prevent rust. For a lid the best thing is to fasten together some 50 old newspapers. Anyone can make such an ice-box as this. It will hold four 8-ounce feeding-bottles and will not cost a penny a day in ice. The poor of Chicago are being taught to preserve in this manner the milk used for the feeding of infants and children. The construction of such an ice-box, even where the materials have to be bought, should not amount to more than about a shilling. In regard to the sale of milk there is an excellent regulation which reads as follows: "Between May 1st and Nov. 1st all windows of shops shall be provided with fly- and dust-screens and all doors shall be provided with self-closing door screens." Now that the pernicious action of flies and the rôle of dust as a disease-carrier are better understood the importance of the regulation will be appreciated. It is time that all foodstuffs, but more especially milk, should be protected from dust and flies. Pastry and sweets are especially attractive to flies, and a law or regulation should compel the dealers in such articles to cover them over with fly- and dust-screens. That the sanitary authorities of so important a city as Chicago have taken action in this respect is encouraging, and we recommend their example to the attention of the sanitary authorities in this country.

REMOVAL OF AN EMBOLUS FROM THE COMMON ILIAC ARTERY WITH RESTORATION OF THE CIRCULATION.

IN the *Journal of the American Medical Association* of May 22nd Dr. John B. Murphy of Chicago has reported a case in which he performed a novel and daring operation. A married woman, aged 41 years, was admitted into hospital on April 29th, 1909. She had enjoyed good health until five years before this time, when she suffered from acute rheumatism, the attack having been repeated two years later. This second attack left her subject to dyspnœa. Four days before admission she was seized with sharp pain in the left side of the upper part of the abdomen, and later the pain extended down to the pelvis. Pleurisy was diagnosed and she was given opiates. The pain in the upper part of the abdomen disappeared, but that in the lower region continued. On the following day she vomited five or six times. An hour later, at 12 noon, she felt pain in both legs, which became cold and remained so until the following morning, when the pain in the right leg ceased and the limb regained its normal temperature. The left leg remained cold; the thigh was blue and the foot was pale and "shrivelled." Over the middle of the thigh the skin showed large blue blebs. On admission the pulse was 82 and the respiration 26; the temperature was not recorded. There was a double mitral murmur. Pulsation was absent in the left femoral artery. The left lower limb was undergoing dry gangrene up to four inches below Poupart's ligament, where there was a line of demarcation. It was decided to remove the embolus that was occluding the iliac artery. Nitrous oxide was given for 30 seconds and an incision was made downwards from an inch above Poupart's ligament parallel to the femoral artery. When the incision had extended through the skin and connective tissue the anæsthetic was stopped, and the dissection was continued until the femoral artery was exposed for a distance of two and a half inches. It was œdematous and easily separated from the neighbouring structures. Two provisional catgut ligatures were passed around it with an aneurysm needle, but were not tied. They were used to elevate the artery, which was incised in its long axis for one inch. The artery was completely thrombosed. With a delicate forceps a bifurcated clot one and a half inches long was drawn from below upwards. Then fresh arterial blood came from below, evidently from a collateral circulation through the profunda. A finger was then placed on the lower end of the artery inside the ligature loop so as to compress the vessel and stop the flow of blood. With the forceps Dr. Murphy began to extract the clot from the proximal side, but could not empty the artery. He then introduced a delicate spoon and withdrew more clot, but no blood flowed. Then he introduced

a No. 6 soft catheter for a distance of seven and a half inches. He withdrew it filled with grumous blood débris, but no arterial blood followed. He reintroduced it, but could not force it through a resistant body at the end. He introduced a ureteral catheter; it met resistance at the same distance, but was forced through the thrombus and passed up for a distance of 19 inches, thus catheterising the abdominal aorta. A small quantity of arterial blood followed its withdrawal. A uterine sound was then introduced. It met with resistance at a distance of 7½ inches. It was forced half an inch farther and on its withdrawal much grumous thrombotic débris came away but no arterial blood. It was pushed a little farther and met firm resistance. No blood followed its withdrawal. It was introduced for a third time and with a little additional force at a distance of eight and a half inches seemed to pass into a free space. This was followed by an intense flow of embolic débris and fresh bright blood like that from a normal femoral artery. The finger was then inserted into the proximal ligature loop to stop the bleeding. With a fine silk suture on a curved conjunctival needle rapid continuous suture of the arterial incision was performed. On removing the digital pressure there was a little oozing between the second and third stitches. Two additional stitches stopped this. Pulsation could be felt throughout the femoral artery. After removal to bed the patient complained of pain in the toes and ankle, the first sensation in these parts after the embolism. The circulation became established below the line of demarcation. Amputation was performed four days later four inches below the line of bleb formation and the flap survived. The trunk of the femoral artery was found occluded by a loose non-adherent clot. Considering the success with which the clot was removed from the common iliac artery it is unfortunate that the operation was not performed until four days after the embolus was arrested at the bifurcation of the abdominal aorta.

THE PUBLICATIONS OF THE RESEARCH DEFENCE SOCIETY.

IN THE LANCET of July 3rd we printed a report of the annual meeting of the Research Defence Society, and that report shows clearly the large amount of work which is being done in teaching the public what are the real aims and methods of physiologists in making experiments on animals. One of the most valuable of the means adopted by the society to educate the unlearned in physiology has been the publication of pamphlets on various aspects of the subject, and we have received four of these pamphlets which have been recently issued. The first is on the need for the use of dogs in scientific experiments, and it is written by Professor E. H. Starling. The dog has been recognised as the friend of man for many centuries, and the affection subsisting between dogs and their owners is very great; it is therefore not surprising that a feeling should exist that it is desirable that some other animal less closely associated with man should be employed for experimental purposes, and attempts have been made to render it illegal to experiment on a dog under the Vivisection Act. Professor Starling in the pamphlet mentioned points out the reasons why the dog is indispensable for scientific purposes. It is only in academic laboratories that research can go on, for there only do we find the men the main object of whose life is the advance of science, and who are stimulated in their researches by the necessity of continually teaching the main truths of science, and in such institutions only is it possible to obtain the assistance of the brighter students as co-workers and to train them as future leaders in science. If therefore the investigations carried out in these scientific institutions involve the use of animals for experiment, the animals must be such as can be kept in a healthy and normal condition either in the laboratory itself or in buildings in close proximity, limited in their area and the nature of their surroundings by the fact that in most cases they have to be placed in the middle of populous centres. In isolated experiments it may be possible to employ the ordinary animals of a farm, such as bullocks, sheep, pigs, and goats, but they are not available for ordinary physiological and pathological investigations. Professor Starling emphasises the fact that no real distinction can be drawn between purely utilitarian and purely scientific experiments. The fact elicited by a scientific experiment to-day may be the starting point of most important utilitarian methods to-morrow. If animals are required for experiment, they must be such as can be kept in health and comfort within the limits of the laboratory. The only animals available are the frog, mouse, rat, guinea-pig, rabbit, dog, cat, and monkey. The frog is chiefly of value because, being a cold-blooded animal, its tissues survive a long time after removal from the body. The guinea-pig, rat, and mouse are of chief value for inoculation when large numbers of experiments have to be made; for instance, in the rooms of the Imperial Cancer Research Fund some 10,000 mice are kept. The rabbit is of great service, but its digestive system is very different from that of man, and for this and other reasons its physiological value is not so great. The monkey is invaluable for investigations on the brain and central nervous system, for in this respect it is closely allied to man, but for this very reason physiologists are loath to use it for experiments where animals lower in the scale will suffice. The organs of the cat are too small to permit of much experimental interference, and the dog therefore is the only animal whose omnivorous diet closely resembles that of man, whose general conditions of life allow it to remain healthy in a laboratory, and whose organs are of a size convenient for experiment. Professor Starling quotes many series of experiments which could only have been made on dogs, and points out the great results which have followed. He shows, moreover, that it is in the interest of nearly all the experiments that no pain should be felt by the animal, for pain would vitiate the results observed. Dr. A. Gardner Robb of Belfast has contributed a pamphlet on the value of antimeningitis serum in the treatment of epidemic cerebro-spinal meningitis. He makes it clear that by means of many experiments on the lower animals an antimeningitis serum was obtained from the horse. Before the use of the serum the mortality of epidemics varied from 69 to 80 per cent., with an average of about 75 per cent. After the use of the serum the mortality has been very much less, varying, he says, from 13 to 42 per cent. The improvement following the use of the serum is seen not only in the absolute mortality but also in the greatly reduced course run by the cases, and the number of serious complications and sequelæ has also been much diminished. It could in the first instance only have been obtained by experiments on animals, and the doubts with regard to its value may have to be tested by repetition of some of these. An important pamphlet is that on the anæsthetics used in experiments on animals. It is pointed out that more than 96 per cent. of all experiments on animals in this country are of the nature of inoculations and do not require any anæsthetic—in fact, they do not deserve to be called operations. All true operations on animals in this country are done under anæsthesia, and the pamphlet discusses the efficacy of morphia and chloral as anæsthetics or analgesics. By the replies of witnesses before the Royal Commission on Vivisection it is conclusively shown that each of these drugs can abolish absolutely all pain if the drug is given in a sufficiently

large dose. The fourth pamphlet is a reprint of an article on the advance in knowledge of cancer by Dr. E. F. Bashford, Director of the Laboratories of the Imperial Cancer Research Fund. It demonstrates clearly that our exact knowledge of the conditions in which malignant disease appears dates only from the commencement of experimentation on animals. We have quoted enough to show that in issuing these pamphlets the Research Defence Society is doing good work, for they will show to all unprejudiced readers that physiologists and pathologists do not torture animals, and that though they insist upon the need for experiments on animals they do their best to mitigate any sufferings of the animals, and that in the vast majority of cases there is no suffering at all.

ACUTE INSUFFICIENCY OF THE SUPRARENALS.

IN an interesting paper published in the sixth number of *Contributions from the William Pepper Laboratory of Clinical Medicine* of the University of Pennsylvania, Dr. R. S. Lavenson records a case showing a group of symptoms due to acute insufficiency of the suprarenals, and points out that this condition, which is regarded as of considerable importance by French clinicians, has been but little studied in other countries. The patient was a widow, aged 44 years, and a native of Ireland. For two years she had been subject to occasional attacks of abdominal pain with vomiting, and during that time she had lost slightly in weight. One morning, shortly after breakfast, having been previously in comparatively good health, she had an attack of vomiting with some epigastric pain. This pain became more severe and vomiting was more frequent. Towards the evening she became slightly delirious and was admitted to the University Hospital under Dr. Stengel. The vomiting had ceased on admission, the temperature was 95° F., the respirations were 48, while the pulse could not be felt. The patient complained of epigastric pain and there was tenderness in this region and in the loins. On physical examination, apart from this tenderness and slight rigidity of the abdominal wall, there was little to be discovered. During the early part of the next day the breathing became of Cheyne-Stokes type. Under vigorous stimulation the patient reacted slightly, her temperature rose to 100° at noon, but her pulse was never palpable, and she died at 8 o'clock in the evening—i.e., about 36 hours after the onset of the symptoms. At the necropsy there were found to be chronic interstitial nephritis, chronic fibrous myocarditis, chronic catarrhal gastritis, fatty degeneration of the liver, with commencing periportal cirrhosis. There was also chronic pancreatitis, with acute interlobar suppurative changes. Both suprarenal veins were thrombosed and the suprarenals were in a condition of acute hæmorrhagic necrosis. Cultures made from the pancreas showed staphylococci, colon bacilli, and a bacillus positive to Gram which was not identified. Those made from the suprarenals were negative. The interpretation suggested by Dr. Lavenson is that the patient had probably suffered from the chronic pancreatitis for some years, and that a recent acute suppurative inflammation had been engrafted on this, leading to thrombosis of the adjacent suprarenal veins. Dr. Lavenson also gives an interesting summary of the etiology and pathology of the condition, with references to the recorded cases. With two exceptions all the cases have been associated with suprarenal hæmorrhage or with so-called adrenalitis, the latter being generally a necrotic rather than an inflammatory process. The two exceptions are a case of Janowski, in which the suprarenals formed small abscesses above the kidneys, and one recorded by Stursberg, in which suppuration was found in both suprarenals of a woman suffering from Pott's disease. The peculiar blood-supply of these glands derived from three sources—viz., the aorta, the renal artery, and the arteries of the diaphragm, the capillaries and venules uniting to form a single vein—has suggested that simple alterations in the blood-supply or the blood pressure may be determining factors in the production of hæmorrhage into the glands, and this explanation has been put forward in regard to the suprarenal hæmorrhage so frequently observed in the newly born. Chronic heart disease and pulmonary disease leading to chronic venous congestion have both been regarded as causes of suprarenal hæmorrhage. Similarly, it has occurred after conditions leading to a great increase in blood pressure—e.g., after repeated epileptic fits. The tendency to hæmorrhage in asphyxia has caused it to be regarded as a possible factor, especially in the newly born. In some cases organisms have been isolated from the suprarenals, and experimentally hæmorrhagic and destructive lesions have been produced in animals by bacterial and other poisons. The condition has also been noted in connexion with purpura, surface traumata, and with burns. A few cases have occurred in association with suppurative changes in adjacent organs as in the one shown by Dr. Lavenson himself. Clinically the following classification is suggested: first, cases with sudden onset and epigastric pain and tenderness followed by abdominal distension and death within a few days. The resemblance between this type and cases of acute hæmorrhagic pancreatitis is obvious. Secondly, an asthenic type, associated with a profound asthenia ending in death within a few days. Thirdly, a nervous type, with convulsions, coma, delirium, or the occurrence of a typhoid state. Fourthly, cases of sudden death; pathologically these are usually found to be due to hæmorrhage. Fifthly, cases with a purpuric eruption or with hæmorrhages into the abdominal viscera. Some of the cases present symptoms of more than one of these groups. A tumour from the hæmorrhage into the suprarenal has been felt in a few cases, and the *ligne blanche* of Sergent is described as being of diagnostic value; it consists of a white line produced by stroking the skin with the finger, but other observers agree that it is to be found in other conditions associated with vaso-motor relaxation. Dr. Lavenson's paper affords within short compass an interesting study of this condition, and since it presents certain facts in regard to suprarenal disease in a somewhat new light should serve to draw attention to the possibility of this explanation in some obscure cases of death from acute abdominal disease.

THE TINNING OF METALS.

IN 1908 the Home Office issued certain draft regulations which it was proposed should apply to factories in which the process of coating metal articles with a mixture of tin and lead or lead alone is carried on. In consequence of receiving from the traders concerned a considerable number of objections in regard to these regulations the Secretary of State ordered an inquiry to be held, and Mr. Edward Thornton Hill Lawes, barrister-at-law, was appointed a commissioner for the purpose. His report has just been issued, based upon a vigorous attempt to reach the truth and to solve the problems involved. Previous reports referred chiefly to the question of the operatives keeping themselves in a state of cleanliness, while certain experiments showed that lead chloride was present in the fumes given off from the tinned article, and conclusions were drawn to the effect that the danger of the process was largely due to this fact. Mr. Lawes, while not accepting that poisoning is entirely due to the fumes, admits that the effects of the metallic lead dust and unwashed hands must now be regarded as inconsiderable, compared with the danger of inhaling fumes containing lead chloride whether in the form of vapour or dust, as lead chloride is very soluble in the human system. The draft regulations

were intended only to apply to the process of common tinning in which lead is used, and therefore the making of tin plates—iron plates coated with tin—and pure tinning were exempted. The making of "terne" plates, which includes the use of lead, was also exempted because the special process adopted involved no harm. It would appear that in the common tinning process lead cannot be dispensed with, but there is reason for believing that by the adoption of an efficient draught near the scene of the operation the risk of lead-poisoning is reduced to a minimum. Other simple measures, as, for example, the use of soap and a nailbrush and a protective apron by the employed, are enjoined in order to guard against poisoning by actual contact with the metal or metallic dust.

THE LEAGUE OF MERCY.

MORE than a thousand guests were present at the garden party which was given by the Prince and Princess of Wales to the members of the League of Mercy at Marlborough House on July 7th. Preceding the reception in the garden some 140 of the presidents and lady presidents of the League met, under the presidency of the Prince of Wales, in Marlborough House, when a report of the work of the League during the past year was read by Mr. J. Harrison, M.V.O. His Royal Highness in his address said: "The progress of the League of Mercy, as measured by the amount handed over to the King's Hospital Fund, with contributions made to hospitals in the home counties, and the numbers engaged in the work of the League, has during the past year shown no sign of decrease. Last year £19,000 were given to the King's Fund, as against £1000 in the first year of our work, while £3495 were contributed to local hospitals outside the area of distribution of that Fund, being 50 per cent. more than in the previous year. The League is thus realising the intention with which it was inaugurated. It is familiarising the humbler citizens of London and the suburbs with the work of the hospitals, and securing in some measure their coöperation in the maintenance of these institutions." Subsequently the Prince and Princess, with Princess Mary and Prince Henry and Prince George, entered the grounds of Marlborough House, where the honorary secretaries of the League, Lord Wolverton, Sir William J. Collins, M.P., and Mr. Harrison, presented to their Royal Highnesses the ladies and gentlemen who had been awarded the Order of Mercy.

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

IN view of the nearness of the long vacation the day schools sub-committee presented to the London Education Committee on July 14th a preliminary report showing what has been done in the direction of enlisting the aid of the hospitals for the medical treatment of school children in the metropolis. The medical officer for education estimates that 43,746 children out of 740,728 are suffering from affections of the eyes, ears, and skin. 39 hospitals have replied to the inquiries of the Council; six have not expressed any desire to coöperate; four hospitals for children and six others desire to help as far as existing rules permit; six hospitals have specifically stated that they can take additional cases. All these decline payment, whilst 16 hospitals are prepared to accept a money payment in one form or another. The replies also indicate that the hospitals would be opposed to any interference by the Council in the management of the institutions, and there is a general feeling that the Council should not ask for any special privileges for the children, although some of the hospitals have expressed their willingness to afford such facilities. The Education Committee decided to recommend the Council to accept the free offers of the Central London Ophthalmic Hospital, the London Hospital, the Paddington Green Children's Hospital, the Queen's Hospital for Children (Hackney-road), the Royal Westminster Ophthalmic Hospital, and the Victoria Hospital for Children; and to enter into negotiations with the authorities of other hospitals to provide treatment in the out-patients' department for a payment not exceeding £50 a year for each additional medical assistant (working one-half day a week) needed for the treatment of the children, together with a sum of 2*s.* for each child so treated, to cover the other expenses incurred by the hospitals.

GUY'S HOSPITAL MEDICAL SCHOOL.

ONE of the most interesting of the annual functions connected with the London medical schools is the summer distribution of prizes followed by a garden party in the grounds of Guy's Hospital. This year the event took place on July 8th and its success was as great as any of its predecessors. The prizes were presented by the Duke of Devonshire in the Physiological Theatre, where Mr. Cosmo Bonsor, treasurer of the hospital, occupied the chair. The Dean in his report was able to give a satisfactory account of the school work during the past year, and he included in his remarks a statement that must have been no less satisfactory to the medical part of his audience and to the parents present whose sons will shortly be dependent on medicine for a livelihood. The Dean said: "It is interesting to note that this period of depression in the medical profession seems passing away, and there is no doubt that at the present time the demand for qualified men far exceeds the supply. Applications are being daily received from provincial hospitals unable to get the medical officers they require, and the income that can be made by the recently qualified man is certainly much higher than it was a few years ago. In the circumstances, therefore, it seems desirable to point out to the public that the profession of medicine holds out at the present time better prospects than it has for some years past, and that an income can be made in its ranks which compares favourably with that to be made in many other professional careers." The Dean concluded his remarks with a plea for further endowment of medical education, which was endorsed by the Duke of Devonshire's subsequent speech. After the prizes had been presented, the company joined those who had been unable to gain admission to the crowded theatre in the grounds, where a good band and a fortunate sun rendered the garden party a very pleasant affair, enlivened as it was by the presence of many lady visitors and a display of academic costume.

Dr. William Stirling, professor of physiology, Dean of the Medical Faculty, and pro-Vice-Chancellor of the University of Manchester, has been nominated the delegate to represent the University of Manchester at the quincentenary of the University of Leipsic, which will be celebrated from July 28th to 31st.

THE Lord Lieutenant for the county of Bedford has signed the commission of Surgeon-Lieutenant-Colonel Rowland Hill Coombs, M.D., 3rd Battalion the Bedfordshire Regiment (Special Reserve), to be his Deputy Lieutenant.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies stated that 2 cases of plague with 1 death were reported during the week ending July 8th.

GUY'S HOSPITAL DENTAL SCHOLARSHIP.—Mr. F. N. Doubleday, L.D.S. R.C.S. Eng., has been awarded the Guy's Hospital Travelling Scholarship of £100.

IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the General Committee of the Imperial Cancer Research Fund was held on Friday, July 9th, at Marlborough House, H.R.H. the PRINCE OF WALES, President, being in the chair.

Amongst those present were the Knight of Kerry (Vice-President), Sir William S. Church, Sir R. Douglas Powell, Sir Henry Morris (honorary treasurer), Sir John Tweedy, Sir Charles Morison-Bell, Mr. H. T. Butlin (President of the Royal College of Surgeons of England), Mr. Gerard Fiennes, Mr. Henry L. Florence, Mr. Robert Littlejohn, Sir Henry G. Howse, Mr. L. Neumann, Dr. J. Rose Bradford, Sir John McFadyean, Dr. T. T. Whipham, Dr. Arthur Newsholme, Mr. Edmund Owen, Dr. F. W. Andrewes, Dr. J. F. W. Tatham, Dr. E. F. Bashford (general superintendent and director of the laboratory), Dr. J. A. Murray, Dr. M. Haaland, and Mr. F. G. Hallett (secretary).

Letters expressing regret at being unable to attend were read from Mr. A. J. Balfour, Lord Strathcona, Mr. Waldorf Astor, and Sir Julius Wernher (Vice-Presidents); from the Duchess of Bedford, Lord Rothschild, Sir Thomas and Lady Glen-Coats, and others.

SEVENTH ANNUAL REPORT.

Report of Executive Committee.

During the past year further correspondence has taken place with the authorities of the International Society for Cancer Research in Berlin, in which it has been suggested that the Executive Committee should reconsider the attitude they have hitherto adopted and join the International Society, and offering that the First International Congress should be held in London. The Executive Committee were of opinion that the decision they had arrived at was in the best interests of the scientific investigation of cancer, and they accordingly felt that they could only adhere to their position. At a subsequent date a petition was presented by the International Society for Cancer Research in Germany to H.M. the King, patron of the Imperial Cancer Research Fund, asking that the decision might be reviewed, but His Majesty, after considering the facts submitted to him with the approval of H.R.H. the President by the chairman, the honorary treasurer, and the general superintendent through the Foreign Office, was graciously pleased to express the view that the Imperial Cancer Research Fund has coöperated freely in the past both with German and other foreign workers and will continue to do so in the future.

It may be well to recall in this connexion the extent to which the Imperial Cancer Research Fund has encouraged the investigations of independent workers both at home and abroad. As is well known, the material for experimental research is difficult and costly to obtain, and is beyond the reach of many who, but for the help given from this Fund, would be debarred from participation in this branch of the research. Recognising that such help must be of the first importance, it has been the aim of the general superintendent, with the entire concurrence of the Executive Committee, to distribute to all applicants who possess the necessary credentials, the material we have accumulated with so much labour and expense. As evidence of this, it should be stated that assistance has been given or promised in this country to the Middlesex Hospital; the Pilkington Cancer Research, Manchester University; the Cancer Research Department, Royal Infirmary, Dundee; Cancer Hospital, Brompton; the Bio-Chemical Department, Liverpool University; the Pathological Department, Aberdeen University; the Laboratory of the Royal College of Physicians, Edinburgh; and others: abroad, to three investigators in Austria, one each in Belgium, Denmark, France, Russia, Spain, Japan, and New Zealand, 23 in Germany, and two each in Italy and the United States of America.

A satisfactory feature of the past year has been the recognition of the work of the Fund by foreign investigators, as is shown by the number of applicants for permission to work under the general superintendent. It has been found impossible to concede all the requests, but the following gentlemen have been accorded full liberty to pursue their researches in our laboratories and every facility has been given them—viz.: Dr. Da Fano, of the Universities of Pavia and Milan; Dr. Medigreceanu, of Bukarest; Dr. Woglom, of Columbia University, New York; Privat-dozent Dr. Trommsdorff, of the Hygienisches Institut, University of Munich. Special arrangements have also been granted to Mr. Shattock and Dr. Dudgeon to pursue certain specific investigations, and to Dr. Nagayo, of the University of Tokio, Dr. S. Kajiura, of the Imperial Naval Medical College, Tokio, and Dr. Alexis Tchitchkine, Professor and Director of the Cancer Institute, Moscow, to study our methods during a short visit to this country.

In view of the importance attached for a short time to the treatment of cancer by trypsin, and of the negative results of such treatment published in the two last annual reports due to the experiments of members of the staff, it may be stated that facilities for further experimentation by an entirely independent investigator on the means of checking the growth of malignant tumours by the injection of trypsin and other like preparations, were afforded in our laboratories and also gave entirely negative results.

Report of the General Superintendent.

Dr. Bashford's report commenced with a reference to the annual report of the previous year, showing the continuity of the work, and went on as follows:—Experiment has demonstrated the truth of the conclusion deducible from medical and surgical experience, that the chief dangers of cancer lie in the difficulty of diagnosing it in a stage permitting complete removal, and still more in preventing dissemination throughout the body. The clinical course, the results of surgical and other treatment, the pathological findings and relation to general metabolism have now been carefully recorded for 300 mice which have been afflicted spontaneously with malignant new growths of the mamma. These observations, according with our experience in man, form a sound foundation for attempts to apply the results obtained by studying the disease when induced experimentally, to the disease as it occurs naturally.

The careful observation of mice which developed cancer spontaneously has yielded additional evidence of the existence of constitutional conditions favourable for growth. The breeding experiments which have been in progress for several years are still yielding results. In all, 29 cases of cancer have developed spontaneously in the mice bred in the laboratory from cancerous stock. As yet no evidence proving the hereditary transmission of cancer has been obtained, and the numbers are not yet sufficiently large to make a detailed analysis of the relative liability of strains with differing degrees of cancerous ancestry profitable; but they have sufficed to demonstrate the validity of the law of age-incidence of cancer for mice in a form comparable with that which holds good for mankind. The subject formed the basis of a communication to the Royal Society, in which not only its statistical importance was emphasised, but also the relation that such accurate knowledge of the incidence of cancer in mice of known age, has to the interpretation of the more or less frequent occurrence of cancer in collections of small laboratory animals, and, by analogy, in other groups of animals of different species. As is well known, crude data obtained from the total number of cases of cancer occurring in the stocks of breeders of mice and rats have been held by many writers to indicate the endemic occurrence of cancer not only in single cases in the case of these small animals, but also in human beings and larger animals living in restricted areas. The short duration of the life of a mouse exaggerates, for statistical purposes, the importance of even such a short lapse of time as three months in determining a measurable increase in the liability of mice to develop cancer spontaneously. Thus breeding experiments, when carried out carefully, and recorded properly, do not support the arguments of an infective, endemic occurrence of cancer for small laboratory animals.

The propagation of spontaneous tumours has yielded results of value by the discovery of a second strain of propagable carcinoma in which the supporting connective tissue or stroma undergoes sarcomatous transformation as in the case described in the Third Scientific Report. The new case differs in many important points of detail, and therefore is extremely valuable in helping to elucidate the factors on which this transformation depends. The most evident constant factor determining the development of sarcoma from the stroma provided by each successive host of the carcinoma cells, has been shown to be the duration of the active growth of the implanted carcinoma. The influence of the parenchyma of this new strain is so potent that the change supervenes in practically every animal in which it grows, and the period at which this change in the host's connective tissues can be recognised is fairly constant.

At the present time 50 mammary carcinomata are being propagated in the laboratory. In no case can it be said that any one tumour is an exact duplicate of another. The characters in which they differ from one another are not associated in any particular way, so that tumours histologically alike may differ widely biologically. The constancy with which the various tumours retain their peculiarities indicates that from the epithelial cells of one and the same organ a theoretically unlimited number of distinct kinds of malignant new growths may arise and maintain their individuality. In the large variety of malignant new growths of one tissue able to maintain their individuality under the uniform conditions of experimental propagation, an explanation is afforded of the contradictory behaviour long observed by the surgeon and the pathologist in malignant new growths which were apparently identical. The variations in malignancy were inexplicable, as was also the fact, that with uniform care in operative procedure uniform results were rarely obtained. Explanations were sought in the differing constitutional conditions of the patients, but experiment has demonstrated that to a large extent the explanation is to be sought in the growths themselves. A much greater number of varieties of malignant new growths exist than was formerly supposed. The variations in structure do not correspond closely with the biological characters, and in particular we do not see any diminution of the malignant properties of the tumour when the histological differentiations of which it is capable are most fully displayed.

During the year even more elaborate and more detailed investigations have been carried out than in earlier years as to the manner in which animals may be rendered resistant to the inoculation of cancer. As we have already shown, this can be effected both by cancerous and by normal tissues. The investigations have defined much more narrowly the experimental conditions under which the change is induced. It has been found that cells, whether cancerous or normal, which have been killed or disintegrated in any way such as by chemical poisons or physical agencies (heat, cold, crushing, &c.), are entirely deprived of their power of conferring resistance. This result is in complete contrast with what obtains when the organisms of infectious disease are similarly killed or disintegrated, for in their case the products retain poisonous properties and powers of inducing resistance. The parallel behaviour in this respect between normal and cancerous tissues is an additional reason against entertaining the intervention of any such poisonous agency in the processes now under consideration.

Of particular interest is the action of radium upon normal and cancerous tissues without causing their disintegration. After exposure to radium for an interval within which no structural alteration can be observed in the tissues, either with the naked eye or microscopically, they may be completely deprived of their powers of growing and of immunising. The abolition of these vital properties is here achieved with retention of the histological structure of the tissues and of intactness of the cells, and the experiments demonstrate that the power to elicit these biological reactions is intimately bound up with, and dependent upon, the vital activities of the cells themselves. Until now the parallel behaviour of normal and cancer tissue in these respects almost excludes the possibility of radium having a selective action upon cancer tissue, as already pointed out for other reasons in 1905 in the Second Scientific Report. It will be well, pending proof of the existence of a selective action of radium upon cancer, not to disseminate exaggerated hopes as to the possible therapeutic value of radium.

Further investigations have been undertaken to elucidate the cellular reactions which take place in the connective tissues of animals during the processes of successful grafting, immunity, and spontaneous healing respectively. While corroborating the general

results already published—viz., that the specific connective tissue and vascular scaffolding supplied by a normal is not supplied by an immune animal—they show that the entire connective-tissue system of the animal responds during the processes both of spontaneous healing and of immunisation. The consequence is that any subsequent inoculation fails to elicit the response necessary for continued growth. It is not intended to deny that changes in the blood plasma accompany the acquirement of resistance or immunity, but while it is difficult to conceive of so complete a constitutional change occurring without this intervention, the constitutional changes throughout the connective tissues prove that changes in the blood plasma are not solely responsible, and that the immunity is not purely of a humoral nature but to a large extent cellular. An explanation is thus afforded of the negative results which have hitherto attended all attempts to obtain an anti-cancerous serum.

From the general hospitals of England and Scotland details of 13,000 cases of cancer which have been submitted to microscopical examination have been collected. For the present the collection of clinical and pathological data from these sources has been suspended, as it is considered that the number already obtained promised to afford as satisfactory results as would an even larger number. This line of enquiry was embarked upon because of its critical bearings upon the interpretation and pathological value of the data on which the national mortality statistics are necessarily based. The wisdom of the conclusion arrived at in 1902 not to undertake a cancer census in the British Empire on the lines of that made in Germany on Oct. 15th, 1900, has been justified not only by our own later experience but also by the fact that since that date most other countries have recognised its futility. Incidentally the collection of clinical and pathological data from hospitals has demonstrated that the taking of a census of cancer patients in the general population, as advocated and practised abroad, is an absolutely worthless tabulation of data vitiated by an exaggeration of all the fallacies inseparable from data of mortality. In a recently published circular the French Association for the Investigation of Cancer expresses its determination not to undertake one of these "extensive and futile cancer censuses" for the same reasons as influenced the Imperial Cancer Research Fund in 1902. An improvement in the value of the statistical investigations of cancer is only to be expected from an improvement in mortality statistics as a whole—i.e., by increasing the accuracy of the data. The necessity for greater completeness and accuracy of the data of mortality applies still more urgently if comparisons are to be made between the statistics of cancer of different countries.

Comparisons between different countries will only be made profitable by an all-round raising of the standards of accuracy and completeness of the mortality statistics as a whole with which those of cancer are inseparably bound up. The willingness with which Dr. Tatham has placed the resources of the General Register Office at the disposal of the Imperial Cancer Research Fund with a view to promoting the attainment of greater utility, accuracy, and completeness of statistics of cancer for England and Wales, deserves to be placed on record. The collaboration of a National Statistical Office has not been vouchsafed to the same extent to similar enquiries out of England and Wales.

The collection of data from outlying parts of the Empire has been continued, particular attention having been directed again to the importance of seeking for peculiar forms of chronic irritation associated with the occurrence of malignant new growths in native races. In this connexion a new and most interesting observation has been reported from Egypt—viz., the occurrence of cancer of the skin of the chest on the triangular area of skin left bare by the clothing worn by the Fellaheen.

Reviewing the results of seven years' work on the comparative and experimental investigation of cancer, one is struck by the difference between the nature of the problems before us seven years ago, and of those now being considered, as well as by the freedom one feels in investigating the problems presented to-day, without the incubus of having to consider them from the standpoints of the many hypotheses now proved to be untenable. I do not think that too much is claimed by asserting that the arduous labour of the past seven years is gradually effecting, and in several respects has actually effected, a complete revolution in many aspects of the cancer problem. But it has done still more in opening up new vistas in biology. Seven years ago no one conceived it possible that portions of the mammalian organism could be kept growing for a period four times the length of life of the whole animal. But to-day the number of different kinds of tissues now being propagated separately, make it theoretically possible that the majority of the tissues may be so grown and segregated. In other words, a living animal can be analysed into many of its living component tissues. The finer relations of various kinds of tissues to one another have been revealed by the application of the new methods. The biological alterations which living mammalian cells may undergo suddenly, as well as gradually, under the influence of experimental conditions, can now be studied. These and many other achievements in the field of general biology are the most important practical fruits which have accrued from the experimental study of cancer, upon which they have only indirect bearings. Ultimately they are bound to be of far-reaching general biological importance, although to-day they are merely the weapons that have been forged to attack cancer. Their further development and their utilisation for the solution of purely biological problems will probably precede the solution of many of the problems surrounding the nature and causes of cancer.

While some chance opportunity may yield results of immediate practical moment, the outlook on therapeutics in the meantime is in the direction of preventing dissemination or metastasis. The means of explaining why inoculated cancer can undergo spontaneous cure have been greatly enriched by the acquisition of fresh strains of propagable tumours behaving in a variety of ways in this respect, and presenting all gradations from some growing progressively in every animal inoculated, to others which, while developing for a time in every animal, are ultimately got rid of in all cases by the active resistance which the tumours induce against themselves.

The development of the investigations in a manner commensurate with their increasing requirements has been rendered possible only by a parallel extension of the laboratory accommodation on the part of the Royal Colleges of Physicians and Surgeons. Whereas in 1902 two rooms only were placed at my disposal, to-day the entire accommodation of the laboratories of the Royal Colleges has been placed at the disposal of the Imperial Cancer Research Fund. This represents a great expansion of the laboratory accommodation, without which it would have been impossible for the investigations to have acquired their present manifold and extensive character. During the first year of active work the staff consisted of the Director and one colleague. To-day there are four official assistants to the Director, six voluntary scientific workers in the laboratory, and a staff of 14 other laboratory assistants. The investigations have grown to an extent which fully occupies the entire accommodation in the present premises. The future of the investigations depends not only upon whether the Royal Colleges can continue to support them on the same generous scale as heretofore, but also upon whether they can provide for the exigencies of future development.

Report of the Honorary Treasurer for the Year Ending June 24th, 1909.

It is my unpleasant duty to report that since 1903 no less a sum than £9915 14*s.* 1*d.* has been taken out of capital account in order to meet the recurring yearly differences between expenses and receipts.

In spite of the considerable increase of the Fund, due to the munificent gift of Mrs. and the late Mr. Bischoffsheim, I regret to say that the expenditure during the financial year just ended exceeds the revenue from investments by £2194 12*s.* 6*d.* The Fund commenced the year with a balance of £656 10*s.* 6*d.* in hand on current account, but it finished with an overdraft of £744 15*s.* 6*d.* The deficit is chiefly attributable to the great cost of publishing the last scientific report, which in size is greatly in excess of any previous report and contains a considerable number of elaborate and valuable illustrations.

The total outlay in issuing this scientific work amounts to £1510 8*s.* 8*d.*, of which £1071 6*s.* 1*d.* is charged to this year's account. There has also been a considerable increase in the amount of research work carried on in the laboratories throughout the last year as compared with all former years, except the latter part of the year 1907–08. This was rendered possible by the additional workrooms and other space accommodation which the two Royal Colleges gratuitously put at the disposal of the Fund. More scientific workers have thus been provided for; and the payments made to them and the increases in the salaries of certain of the original subordinate officials, whose experience in the laboratories has rendered their services increasingly valuable, have led to an increase of £266 11*s.* 10*d.* in the salaries and wages of those engaged in the laboratories. Besides the large increase in the scientific report account, and the increase just referred to in salaries and wages, the only other items of expenditure which show increases are printing and postage, on which there is an excess over last year of £14 5*s.* 7*d.*, and miscellaneous office expenses, in which there is the slight increase of £4 11*s.* 4*d.* In other items of expenditure considerable decreases appear.

It is a regrettable coincidence that in a year when a very large additional expense has been incurred in the publication of the latest scientific report the amount received by the Fund in donations and legacies has fallen lower than in any previous year. The total sum contributed to the Fund throughout the whole year is only £781 5*s.* 6*d.*, showing a depth of material indifference on the part of the public to which the worst of the preceding years had not even approximately descended.

Thanks, however, are due to several very constant and continuing supporters, as will be seen at a glance on looking to the list of contributions for the year. In this list will be found the names of several good friends to the Fund who have subscribed, even to their seventh or eighth contributions; whilst the Worshipful Company of Carpenters have doubled the amount of their annual subscription.

Unless a substantial sum is shortly forthcoming in the way of legacies or donations it will be necessary for the trustees to realise at least £1000 to cover the overdraft.

Moreover, owing to the change in the ownership of the Examination Hall where the research work at the present time is still being carried on, it will very soon be requisite to obtain new premises and to build new laboratories. Hitherto, not a penny has been spent on building or equipment—thanks to the munificent generosity of the two Royal Colleges.

What the disposition of the Colleges towards the Fund, by way of their continuing to find adequate working quarters, may be, it is not possible for me to predict; but, seeing that the Colleges will themselves have to make very large outlays of money in building a new Examination Hall, the Imperial Cancer Research Fund must be prepared to provide a new home for itself in the immediate future.

Sir WILLIAM CHURCH moved the adoption of the report. He said: At the last annual meeting of the Fund the third scientific report was in course of preparation and continued to occupy much of the time of the staff until shortly before its publication in October last. This year it is not the intention of the committee to publish any scientific report; the work through the year has been mainly a development of the investigations recorded in our last report and as yet is not sufficiently complete for publication. The experimental work which has taken place during the past year confirms the opinion expressed some years ago that the course of cancer as it can be observed in the laboratory agrees with that which occurs in man, and forms a sound foundation for studying the disease as it is met with in the human species. As it has already been amply demonstrated that all malignant growths of the mamma occurring in mice can be experimentally propagated in other mice, only those instances of the disease which presented special features differing from those which had been transplanted in former years were propagated. Such growths numbered 28 out of 107 which were met with in the course of the year, being in all instances cases of spontaneous cancer. The breeding experiments from mice derived from cancerous stocks have been continued, but the numbers are as yet insufficient to render a detailed analysis of the figures useful for the comparison of the frequency of cancer in mice with a cancerous ancestry with the frequency of cancer in mice generally.

One of the carcinomatous tumours propagated during the past year has thrown light on the connexion between implanted carcinoma and the development of sarcoma in the tissues of the host. In this particular instance the development of sarcoma follows almost constantly upon successful inoculation, and the determining factor appears to be the duration of the active growth which takes place in the cells of the implanted carcinoma—the longer they grow the greater the tendency to sarcomatous changes in the tissues of the host. At the present time 60 mammary carcinomata are being propagated and in none can it be said that any one tumour is an exact counterpart of another. Thus we see that from the epithelial cells of one and the same organ a number of distinct forms of malignant new growths may arise and maintain their general character when propagated. Again, whilst each strain retains its general character, the tumours of any one strain may manifest minor fluctuations in structure and biological behaviour. Furthermore, the variations in histological character do not appear to be necessarily accompanied by corresponding differences in malignancy. Further investigations have been carried out for the purpose of discovering the manner in which animals can be rendered resistant or immune to inoculation with cancer. It has in former years been shown that this can be effected by the implantation either of normal or cancerous tissues. The later experiments have shown that if the cells introduced into the animal have had their vitality destroyed either by chemical or physical agency they are deprived of their immunising power. The action of radium on normal and cancerous cells produces a similar effect, for it is found that exposure to the emanations of radium, though for a time which is insufficient to cause any discoverable alteration in the structure of the cells, yet deprives them of the power of conferring resistance or immunity against inoculation by cancerous tissue. The similar action which radium has on both normal and cancerous tissue supports the opinion already expressed in 1905 that radium has no selective action on cancerous cells. All attempts to obtain an anti-cancerous serum have hitherto been unattended with success, and experiments have been made, and are still being continued, to determine, if it be possible, to separate from the cancer cells immunising powers apart from their continued growth and capability for propagation. Large numbers of mice suffering from spontaneous cancer as well as from inoculated growths have been treated by the implantation of normal or cancerous living tissues, but it is, as yet, premature to draw any conclusions as to the effect of such implantation either in conferring resistance to the growth of cancer, or in influencing its dissemination on recurrence after the removal of a cancerous tumour. It has been determined on the recommendation of the Statistical Committee to cease the collection of cases from the general hospitals of England and Scotland. 13,000 cases, which have been submitted to microscopical examination and pronounced to be cancerous, have been received, and this number is considered to be sufficient to afford data as satisfactory as would larger numbers for testing the value of "cancer censuses," and for estimating the correctness of the mortality of the disease as shown in the national mortality statistics. The collection of these cases has proved the importance of post-mortem investigation, and the difficulty which exists in the diagnosis of cancer. The collection of data from outlying portions of the Empire is being continued, and some new and interesting facts have been obtained. Reviewing the work done during the past seven years it is seen that the investigation into the nature and cause of the disease stands in a very different position now from what it did when the Fund was instituted. A large number of the hypotheses regarding the cause of cancer put before us then have been shown to be untenable, and the biological changes which living animal cells can undergo or give rise to, have been closely studied from a new standpoint, opening out a fresh and hopeful field for investigation. Material for the experimental study of cancer has been freely supplied, entailing considerable extra labour on our staff, to a large number of independent workers in cancer research both in this country and abroad. In the opinion of your committee it is by the free interchange of views and material between the independent workers in cancer research that definite results may be obtained rather than by holding formal conferences in which theories not infrequently play a more important part than facts. Until some general consensus of opinion as to the cause and nature of cancer has been arrived at by those who devote themselves to the research, it appears premature to hold a general conference on the question.

Sir HENRY MORRIS (honorary treasurer), in seconding the motion, said that the annual reports which had been presented were divided into two parts, the one dealing with the scientific results of the research, and the other dealing with the financial position, and it had been thought desirable, in drawing up the report this year, to draw special attention to one of those changes which came about through lapse of time, and which in this instance, was particularly regrettable, though unavoidable. He referred to the passing of the old Examination Hall, where the research work had been carried on since its initiation into new hands. It had been a great feature in favour of the Cancer Research Fund that not a single penny had been spent upon bricks and mortar or upon equipment, but he feared that the time would shortly arrive when it would be impossible to make a similar statement. Owing, however, to the fact that the Royal Colleges had become tenants for the time being of a large part of the Examination Hall, provision had been made for the continuance of the research work in the same quarters for the next three years. After that time it was not improbable that some demand might be made upon the capital of the Fund for the purpose of providing it with a new home. Whether that would be necessary or not he could not predict, but he felt quite sure that the subscribers and donors to the Fund might have confidence that, in the event of building becoming necessary, strict economy would be studied as well as efficiency.

The resolution was carried unanimously.

Mr. FIENNES next moved a vote of thanks to the chairman and members of the Executive Committee, the sub-committees, the honorary treasurer, and others who had assisted in the work of the Fund during the past year. He could imagine no body of gentlemen to whom the thanks of the public were more justly due. From the inception of the Fund it was evident to everyone who, with knowledge, gave himself to the work, that the quest would be long and arduous; that nature would not yield up one of her deepest and direst secrets without a prolonged struggle. It was evident also that the public, at first ardent in hope that the problem of the deadly scourge would be speedily solved, would, as year by year went by, grow forgetful, even despairing. Nevertheless, those whom he asked the meeting to thank had given their time and thought without measure and without price to a work apparently so priceless, and for that the deepest gratitude was due. The statement which had just been made—a statement full of hope and yet little calculated to attract those whose attention was continually caught by gaudy phantoms—was the measure of the wisdom of those who, in the founding of the Fund, insisted that it should be based on realised and realisable assets. The subscription list for the year showed, unfortunately, that public interest had waned; and, speaking as a layman, he would say that as soon as it was possible, without doing violence to the scientific conscience, it was important that results, even negative results, should be announced. The vote of thanks which he proposed included a number of the names best known in British medicine, and some of the most munificent of public benefactors. Without enumerating them all, perhaps he might be allowed to refer specifically to Sir Henry Morris, by whose recent advancement all who were connected with this movement felt themselves honoured. Sir Henry Morris's claims on the gratitude of mankind were not limited to his work in connexion with this Fund; but the record of unselfish toil which he had given to its organisation and development would ever stand as a memorial to him.

Mr. NEUMANN seconded the motion, which was unanimously agreed to.

Sir R. DOUGLAS POWELL proposed that Professor G. Sims Woodhead be re-elected a representative of the general committee on the Executive Committee, which was seconded by Dr. NEWSHOLME, and carried.

Mr. BUTLIN moved:

That the Royal Colleges, having discontinued the appointment of a special laboratories' committee, the two representatives on the Executive Committee hitherto appointed by the laboratories' committee be in future appointed directly by the Royal Colleges, one to represent each College.

This was seconded by Dr. ROSE BRADFORD, and agreed to.

Sir JOHN TWEEDY, in moving a vote of thanks to the Prince of Wales for presiding, said that the leadership of His Royal Highness was of the greatest service to those who were working for the Fund and a source of particular encouragement to the medical and surgical experts who were engaged in this work and who were supervising it. Moreover, it was an assurance to the subscribers that the administration of the Fund was carried on with due regard to efficiency and economy. For more than 2000 years the best minds in the medical profession had been engaged in the study and investigation of cancer, but he had no hesitation in saying that more progress had been made in the last six or seven years—i.e., since the inception of the Fund—than in the previous 20 centuries. There was no disguising the fact that this recent progress was entirely the outcome of the experimental method, and it was in this respect he thought His Royal Highness's patronage and support was of such great service to the Fund and to the community. They could not close their eyes to the fact that there was a small but influential section of the community who disapproved altogether, and under any circumstances, of the experimental method. There was, however, a larger and a more enlightened portion of the community who were willing that this experimental method should be continued under the proper safeguards, not only of efficiency and skill, but of scrupulous considerations for humanity and refinement. It was in this respect that he thought His Royal Highness's distinguished support and headship of this fund was of such great service to the community. The goal at which they were aiming might be distant, but he was confident that they would only reach it by the experimental method. By any other method they not only made no real progress, but they walked merely in a circle.

Sir JOHN MCFADYEAN seconded the motion, and in doing so said he would like to associate himself with everything that had been said by Sir John Tweedy. It must be a source of satisfaction to His Royal Highness, as President of the Imperial Cancer Research Fund, to know that everything that was humanly possible was being done by Dr. Bashford and his able colleagues to throw light on the cause of a disease which was the occasion of so much human suffering as cancer; and as chairman during recent years of the Pathological Subcommittee of the Fund he wished to corroborate what had been said both by Sir William Church and Sir John Tweedy as to the considerable progress that had already been made towards the final objects of the Fund. No one who was acquainted with the scientific reports which had already been published could doubt that for a moment. In the first place, a number of erroneous theories, which were positively harmful because they were directing the research into fruitless channels, had been entirely swept away; and, in the second place, new facts of the greatest pathological interest had already been discovered. It was quite true that the cause of cancer and the means of preventing or of curing it had not been discovered, but even with regard to these points there was, he thought, no occasion to despair. At any rate, the interest which His Royal Highness was pleased to take in the Imperial Cancer Research Fund was a constant encouragement to those who had to plan and to carry out the work for which the Fund made itself responsible.

The motion was passed with acclamation.

The PRINCE OF WALES in reply said:—

Gentlemen,—I sincerely thank you for the cordial manner in which you have supported the vote of thanks so kindly proposed and seconded by Sir John Tweedy and Sir John McFadyean. Last year circumstances prevented me from attending at our annual meeting, so I am glad to be able to meet you here to-day, and, after listening to Sir William Church's remarks, I think we may congratulate ourselves upon the results of the work of the Fund in the past year. In the report of the executive committee reference is made to a petition which was presented by the International Association for Cancer Research in Berlin to His Majesty the King, during his visit to Germany. The correspondence which has taken place, and all the proceedings of the executive committee on this subject, were submitted to me, and I wish now to say that I gave my approval to the decision of the executive committee, feeling convinced that the methods adopted by the Imperial Cancer Research Fund, of freely distributing their material to workers in every country, of permitting anyone with satisfactory credentials to study our methods in our laboratories, and of encouraging international collaboration amongst the workers in the various cancer laboratories are the wisest and most efficient means of advancing the study of cancer. This policy of active laboratory collaboration as distinct from conferences has been productive of much good work already, because, whilst the Fund has achieved a recognition of its position as a national and imperial institution, the scientific standing of the staff and the freedom with which it accords assistance to foreign laboratories and workers are rapidly establishing for it a position of international importance. When presiding over this committee on previous occasions I have expressed the view that immediate results in regard to the cure of cancer must not be counted upon, but that rather we must look forward to steady and consistent progress in accordance with the experience of all scientific investigation. There can be no doubt, however, that the seven years' work already accomplished by the Imperial Cancer Research Fund has brought about a complete change in the standpoints from which cancer should be studied. Many and varied lines of research are being pursued with the utmost perseverance, and every development, as it occurs, is followed up with the minutest care. During the past year an important work—the Third Scientific Report—has been issued from our laboratories and has been received with high appreciation by all those at home and abroad who are competent to express opinions on these highly technical researches. This, of itself, marks a steady and valuable advance, and one with which we have every reason to be satisfied. The number of applicants to work under the general superintendent, coming as they do from all parts of Europe, from the United States, as well as from Japan, is evidence of the high value which is attached to the work in our laboratories. The honorary treasurer calls attention to the fact that again the expenditure has exceeded the year's receipts, and that there is now an overdraft at the bank. Looking to the possible duration of these researches, the realisation of capital is to be deplored, but this will be unavoidable unless further assistance in the shape of annual subscriptions and donations is forthcoming. In conclusion, I offer my best thanks to the chairman and members of the different committees, and also to Dr. Bashford, our director, and his colleagues for the valued services rendered by them during the past year.

The proceedings then terminated.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 16th, 1831.

EXTRAORDINARY RECOVERY OF SIGHT.

THE following case is very singular:—Pêcheur, a serjeant in the Royal Guards, received so violent an injury on the left eye by a fall, that the globe of the eye was burst, and the crystalline lens, together with the aqueous and vitreous humours, were forcibly expelled. The palpebræ were ecchymosed, the conjunctiva was red and bloated, and the lower part of the cornea was separated from its attachment to the sclerotic by an irregular cut, through which a portion of the iris protruded. The parts were washed, the iris was carefully returned, the divided edges of the cornea were approximated, the eyelids were drawn close and retained so, and a quantity of blood was drawn from the temporal artery. Ice to the head, sinapisms to the feet, constant darkness, and a rigorous diet, were enjoined. During the night a second bleeding was practised, and the next day cupping-glasses were applied to the nape and between the shoulders. Baron Larrey considered this eye as lost, or at least for ever deprived of the faculty of sight; but, "*a notre très grande et agreable surprise*," the globe gradually refilled, on the 22d day the cornea began to assume a healing aspect, and in about six weeks it was perfectly cicatrized. The natural form and almost ordinary volume of the organ were restored, and by the aid of a very convex glass this soldier came to see objects distinctly, and continues to discharge all the duties of his office. "This very curious case evidently proves, that the vitreous humour, although in greater part lost, can be regenerated," and that the crystalline lens may be dispensed with!—*Med. Chir. Rev.*

THE TREATMENT OF SARCOMA BY BACTERIAL TOXINS.

A MEETING of the Surgical Section of the Royal Society of Medicine was held on July 13th, Mr. J. WARRINGTON HAWARD being in the chair, when Dr. W. B. COLEY (surgeon to the General Memorial Hospital, New York) delivered an address on the Treatment of Sarcoma by Bacterial Toxins, a treatment associated with his name. He said:—

Although I have been working constantly upon this line of investigation during the past 17 years, it has grown more interesting to me with each succeeding year, and while the results have not been as satisfactory as one who is seeking for perfection could wish, they have been sufficiently real and tangible, I think, to be entitled to more careful consideration than they have yet received. Furthermore, they may have an important bearing upon the whole cancer problem, since if by the administration of certain bacterial toxins we can cause the degeneration, death, and absorption of living tumour cells of one variety of cancer—sarcoma—it is not unreasonable to suppose that by the use of some other forms of bacterial toxins we may succeed in destroying or inhibiting the growth of the other and more common variety—carcinoma.

First, I wish to emphasise the point that the method rests upon a solid foundation of accepted and indisputable clinical facts—namely, that in a considerable number of cases of inoperable cancer of all varieties, and especially sarcoma, such tumours have been known to entirely disappear under attacks of accidental erysipelas, and patients have remained well for many years thereafter. For the benefit of those who refuse to accept clinical results unless confirmed by laboratory experiments these latter tests have now been supplied, since during the last two years, at the Huntington Cancer Research Fund, Dr. Martha Tracy and Dr. S. P. Beebe have shown that large multiple sarcomas in dogs rapidly disappear under local or systemic injections with the mixed toxins of erysipelas and bacillus prodigiosus. I have already collected 38 cases of malignant tumours, 17 sarcoma, 17 carcinoma, and four doubtful, in which an attack of erysipelas had occurred. In 23 cases the attack was accidental, and in 15 it was the result of inoculation. Of the 17 cases of carcinoma, three were permanently cured. One, a probable carcinoma, was well five years after the attack of erysipelas. The remaining 13 showed more or less temporary improvement. Of the 17 cases of sarcoma, seven were well from one to seven years afterwards. There was little change in preparation until Dr. Tracy's experiments at the Huntington Fund two years ago proved the truth of the opinion that I had already expressed some time before, based upon clinical observations alone, that the bacillus prodigiosus had in itself a curative effect upon tumours, independent of any action it might have in intensifying the virulence of the erysipelas. Dr. Tracy's first experiments with the bacillus prodigiosus alone confirmed the investigations of Vaughan of Ann Arbor that the bacillus prodigiosus toxins were the most powerful known. Further experiments with sarcoma in dogs showed that sarcomas would disappear under the injections with the bacillus prodigiosus alone, without any erysipelas, although not quite so rapidly as when the combined toxins were used. Utilising these newly proven facts, Dr. Tracy proceeded to grow the two organisms separately, and by adding a certain definite quantity of the sterilised bacillus prodigiosus bouillon to each ounce of the streptococcus broth was able to secure what had never been possible before—namely, a definite standardisation of dosage. This enabled us to overcome the greatest difficulty we had had to contend with all along. The first preparations which Dr. Tracy made in the way described had so large an amount of bacillus prodigiosus that very severe reactions were obtained by minute doses, and in one case, in the hands of another physician, death resulted within a few hours after an injection of one-quarter cubic millimetre into a very vascular tumour in the mediastinal region. After this calamity the addition of the bacillus prodigiosus to the toxins was immediately reduced to one-half, and this amount has been continued up to the present time.

The macroscopic as well as microscopical changes observed by myself and others have been precisely the same as those formerly noted in cases of sarcoma treated by inoculation of the living germs. First, the tumour becomes much paler, owing to decreased vascularity; secondly, it becomes much more moveable and less fixed to the surrounding tissues; thirdly, it soon begins to show areas of softening, due to caseous degeneration or necrobiosis of the tumour elements; and fourthly, there is gradual disappearance, either by absorption or by breaking down, and liquefaction of the tumour tissue. In such cases incision and drainage are sometimes advisable, provided the tumours are in accessible regions. These changes are precisely the same, whether the toxins have been injected directly into the tumour or whether the injections have been made in remote parts of the body, proving that the action of the toxins is systemic rather than local. In a certain number of cases—in my own experience in a little over 10 per cent.—this degenerative process has gone on until complete absorption of the tumours had taken place and the patients have remained cured. In other cases improvement is only temporary, and in a very few instances, especially in cases of very large and vascular tumours, particularly in those of the melanotic type which of late pathologists are inclined to class as carcinoma, no marked beneficial effects have been noted. What is the explanation for these variable results?

The explanation is, I think, not so very difficult. My own belief, expressed 16 years ago and held more firmly with increasing clinical experience, is that all varieties of malignant tumours are of extrinsic or microbic origin. Just what type of organism this may be, whether bacterium, protozoon or spirochæta, or what not, is of little consequence. Assuming such origin, we have but to follow the analogy of other diseases of known germ origin. We know that in all such diseases there is a natural immunity and an acquired immunity. In the case of malignant tumours there is probably a natural immunity which is very great, but in certain cases it is absent or becomes lowered and the germ finds a favourable site and here starts the primary malignant tumour. The important rôle that trauma or injury plays in the development of malignant tumours can, to my mind, be explained only on the theory of a microbic origin. Assuming such an origin, the action of the toxins appears to me to produce certain changes in the blood of the sarcomatous patient which restore the weakened or lost immunity, or natural resisting power of the tissues, when the cancer cell, no longer finding conditions favourable for further growth and development, undergoes a process of degeneration or absorption. The reason why a cure results in some cases is, that in these the antagonistic action of the toxins is sufficient to destroy the cancer cell completely or render the soil unfavourable for further growth, whereas, in other cases, the tumour cells, by reason of greater vigour or better nourishment, are more resisting, and although receiving a temporary set-back by reason of the changes in the blood produced by the toxins, soon accommodate themselves to the new environment and continue to grow as before. The high temperature produced by the toxins may also be a factor in causing the improvement that follows their use. Many and repeated blood examinations of sarcomatous fractures treated with the toxins show almost universally a marked leucocytosis as a result of the treatment.

While in my earlier papers I have practically limited the use of the toxins to cases of inoperable sarcoma, further experience has convinced me that they have a much wider field of usefulness. I would at present advocate their use first in all cases of inoperable sarcoma, except the melanotic, which are classed as epithelial in origin by most pathologists; secondly, in cases of sarcoma originating in the long bones in which operation means a sacrifice of the limb (in these cases if no improvement is noted at the end of two or three weeks, I would then advise excision, resection, or amputation, according to the individual case); thirdly, in all cases of operation for primary sarcoma upon the healing of the wound (as a prophylactic against recurrence); and fourthly, after all operations for carcinoma. In the last instance the proceeding would greatly lessen the number of recurrences, an opinion which is based partly on the clinical observations of a considerable number of cases in which both epithelioma and carcinoma have entirely disappeared and have been permanently cured from attacks of accidental erysipelas. By far the greatest value of the toxins in my opinion lies in this use as a prophylactic measure. Used in this way, in much smaller doses

than would be given in large inoperable tumours, they are practically free from risk. I have already a sufficient number of cases of sarcoma in which I have used the toxins as a prophylactic measure to justify such use. The use of the toxins as a prophylactic after operation I believe to offer by far the most important field of all, and one that is gradually being appreciated by the profession. At the Mount Sinai Hospital the toxins are now used in all inoperable cases of sarcoma as well as after operation for primary sarcoma. In carcinoma I believe the toxins, if used after operation, will prevent in a considerable number of cases recurrence that would otherwise take place. When used as a prophylactic measure in the way I have indicated, I believe the toxins to be entirely devoid of risk. There have been no deaths in the cases in which the treatment was used as a prophylactic. In these cases the dose given is smaller and it is not increased to the point of producing severe reactions; a moderate temperature of 99° to 101° is all that is required. This will not in any way interfere with the ordinary routine of life. The toxins can be given for long periods of time without any harmful effects, as is shown by a case of eight times recurrent sarcoma of the chest wall in which the treatment was continued for four years, and the patient is now well 14 years after the beginning of the treatment, or ten years after its cessation.

The facts I have set forth are sufficient in my judgment to justify the giving up of the traditional method of treating all cases of sarcoma of the long bones by immediate amputation. In most cases I believe it safe to wait for two to three weeks, the time required for a trial with the toxins, before sacrificing the limb. Cases of sarcoma of extremely rapid growth will probably show little or no effect from the toxins, and it will be natural to say that valuable time will be lost by the preliminary use of the toxins. However, it is my opinion that early operation in these cases is not of the slightest avail. On the other hand, in certain cases—probably a small number—the limb will be saved by the preliminary use of the toxins. In those in which early improvement is not marked operation can then be performed with even greater chances of ultimate success than had the toxins not been first used. The greatest value of the toxins in sarcoma of the long bones will, I believe, be shown to lie in a judicious combination with conservative operative treatment. By such procedure a hip-joint amputation, which has been the almost uniform rule for sarcoma of the femur, will give place to an amputation below the trochanter, a stump of sufficient length being left to permit the wearing of an artificial limb. The toxins will be administered for a considerable period of time after amputation with the hope of destroying the cells which were left behind and which, with operative treatment alone, cause the local and metastatic recurrences. The same rules apply to sarcoma of the humerus. In sarcoma of the tibia, fibula, and radius and ulna, particularly of the myeloid type, in place of amputation, as formerly advised and still advocated by the great majority of surgeons, we can safely substitute either curetting or partial resection, followed by a thorough course of the mixed toxins. While good results have been obtained in a very limited number of cases in this group by operation alone, I am convinced that that the number of successes will be greatly increased by combining the toxin treatment with conservative operation. Earlier diagnosis is steadily becoming the rule, owing to increased knowledge of the pathology, coupled with more correct interpretation of X-ray plates and the use of earlier exploratory operations; and conservative treatment along the lines I have mentioned will soon show results infinitely superior to those obtained by radical operations.

It is very hard to lay down any definite rules as to the duration of treatment such as would apply to all cases. My own feeling, based upon experience up to the present date, is that there is much more danger in stopping the toxins too soon than in administering them for too long. With four or five exceptions, cases in which the tumours have disappeared under the toxins have remained well. These few cases of recurrence furnished the most convincing evidence of the undoubted influence of the toxins in sarcoma, inasmuch as they absolutely prove that, in these cases at least, there could have been no error of diagnosis. Can we then form any practical rules to guide us as to how long the toxins should be administered? I would say give the toxins till the tumours have entirely disappeared and then continue in smaller doses and at longer intervals for three or four months longer. If no improvement is noted at the end of four or five weeks a successful result is not likely to occur and retardation of the growth is all that can be expected from a further use of the toxins. Much depends upon a judicious determination of the dosage for the given case. I always begin with one-fourth of a minim, diluted with sufficient boiled water to ensure accuracy of dosage, injected either into the buttocks or pectoral region. After the individual's susceptibility has been ascertained one can then inject into the tumour itself if it is in an accessible region. The initial dose into the tumour should always be less than, not more than one-fourth of, that used elsewhere. I believe it a good plan to give the injections alternately into the tumour and into the buttocks. Daily injections should be given, increasing by one-fourth of a minim until the desired reaction—namely, a temperature of 102° to 104°—has been obtained, unless the patient is in a weakened condition. Having secured this reaction, the dose should no longer be increased until it fails to give a reaction, when it can again be increased by one-fourth to half a minim.

The greatest obstacles to a fair trial of the toxins up to the present time have been: (1) the difficulty of obtaining a preparation of the toxins of uniform standard of strength and efficiency; (2) the published failures of a few men who have given the method a limited and most imperfect trial, usually with the preparation of the toxins entirely different from that used by myself; and (3) the limited number of cases of inoperable sarcoma seen by the ordinary physician or surgeon. Occasionally the physician has heard of the mixed toxins in such cases, but if he has read of the method he has probably forgotten the details and has little faith in its value. Now and then a surgeon is found who takes the time to give the matter special thought, and who is willing to give the patient the benefit of a trial with the toxins. He begins with some fears and more doubts, and when he sees the patient in one of the severe chills, sometimes with marked cyanosis, very rapid and feeble heart action, with a temperature of 103° to 105°, he hesitates to go on, or is unable to instil into the patient the courage and confidence so necessary to the continuation of the treatment to a successful termination. For these or other reasons injections are stopped and the treatment is pronounced a failure. While I have personally found the administration of the mixed toxins practically free from danger, there have been several fatal cases in the hands of other physicians brought to my notice which, taken together, show that there are certain risks connected with the treatment. If, however, the precautions which I have always carefully emphasised in former papers be observed, these risks, I believe, will be reduced to a minimum.

In my own experience, in nearly 500 cases, there have been only three deaths. In the majority of the fatal cases thus far observed death was apparently due to an embolism. This was the cause in two of my own cases and in both instances the general condition of the patients was extremely bad; there was generalisation of the disease and very marked involvement of the mediastinal glands. In both cases the patients had only very small doses of the toxins which were not pushed to the point of giving any marked reactions. Most of the deaths in the hands of other men have been due, I believe, to too large an initial dose given directly into a vascular primary growth. In recent years I no longer inject the initial dose directly into a tumour, but first test the individual susceptibility of the patient by systemic injections in the buttocks or pectoral region; after a few such injections local treatment may be begun, always starting with a minimum dose. I rarely give more than 1-6th cubic millimetre into the tumour in children, especially if situated in the neck or mediastinum, and never more than 1-4th cubic millimetre in adults. I have seen a temperature of 105° result from 1-5th cubic millimetre injected into a large cervical tumour in a child. In one of the fatal cases in the hands of other men, death resulted from an injection of 1-4th cubic millimetre of Dr. Tracy's early preparation (twice as strong as at present) directly into a mediastinal tumour. This was an elderly woman of very feeble vitality. Another case, recently brought to my notice by the physician in charge, contains an important lesson—i.e., that the toxins should never be administered by any physician who is not willing to give sufficient time—I will not say to read thoroughly all of the literature connected with the treatment, but at least the directions

upon the bottle. In this case the initial dose was five cubic millimetres injected into a vascular tumour. The physician stated that he had turned the case over to his assistant who gave him five cubic millimetres and the patient died in 15 minutes. Death might also have resulted had he given him 20 grains of morphine, though perhaps not so quickly. The toxins are indeed, like strychnine and morphine, safe if judiciously and intelligently administered, but exceedingly dangerous if given in the way described.

I have known of another instance, a case of sarcoma of the lower jaw, in which, after two operations had been performed and it was not thought that the disease had been entirely removed, the toxins were advised immediately after operation. In this case also the treatment was turned over to an assistant. Although never within the last 15 years have the directions sent out with the toxins called for larger initial doses than a quarter or half of a cubic millimetre, the assistant in this instance proceeded to give 20 cubic millimetres as a first dose. This was some years ago when the preparation was considerably weaker than at present, or at least when its strength was more variable. Although the patient went into coma and remained comatose and delirious for some time, he finally recovered and is well now, two years afterwards, the tumour of the jaw having been cured.

In a few other cases, however, in which death resulted the ordinary precautions had apparently been carried out. One such case was seen by myself in consultation and the treatment advised and a general outline of the dosage given. This was a woman, 55 years of age, with a very large vascular sarcoma of the ilium. Her general vitality was much impaired and the circulation was not good. The toxins were begun in minute doses, 1-4th cubic millimetre, and gradually increased up to the point of reaching a temperature of 103° to 104°. After about two weeks' treatment an injection of 12 cubic millimetres caused a severe chill, the patient became very weak and exhausted, and did not recover. In this case, had I had personal charge of it, I have no doubt that, seeing that she did not bear the toxins well and that the temperature remained high, I should not have increased the dose as rapidly as was done. It is natural that any new method of treatment of disease should stand a certain definite test before it can hope to secure recognition. When it comes to the consideration of a new method of treatment for malignant tumours we must not wonder that a profession, with memories overburdened with a thousand-and-one much vaunted remedies that have been tried and failed, takes little interest in any new method and shows less inclination to examine into its merits. Cold indifference is all it can expect, and rightly, too, until it has something beside novelty to offer in its favour. 16 years ago, when I began to use the toxins for inoperable sarcoma, I did not expect the profession to adopt the method. I fully expected to wait until its great objection of novelty had given way to time and my own results had been duplicated and confirmed by other observers. No one could see the results which I saw and lose faith in the method. To see poor, hopeless sufferers in the last stages of inoperable sarcoma show signs of improvement, to watch their tumours steadily disappear, and finally see them restored to life and health was sufficient to keep up my enthusiasm. That only a few instead of the majority were followed by such brilliant results did not cause me to abandon the method, but only stimulated me to more earnest search for further improvements. The results now obtained, comprising 52 personal successes and twice that number in the hands of other men, should be sufficient, I believe, to convince the majority of the profession that the toxin treatment of inoperable sarcoma contains a principle of sufficient value to be entitled to more careful consideration.

Mr. H. T. BUTLIN (President of the Royal College of Surgeons of England), in moving a vote of thanks to Dr. Coley, said that if America could spare Dr. Coley for one year this country would be glad to have his services.

Sir A. E. WRIGHT, who seconded, suggested that in order to raise the treatment carried out by Dr. Coley above the reproach of being founded only on clinical experience an enormous amount of laboratory work was required to supplement their knowledge. What was wanted was some method by means of which the dosage could be known definitely. He considered that Dr. Coley's treatment had not been much carried out in Europe because the laboratory side of the method had not been brought into prominence.

The CHAIRMAN said that they hoped to have some satisfactory basis for the use of the toxins, and that what Dr. Coley had said would encourage them to try the method in a disease which otherwise was so hopeless.

The vote of thanks was carried with acclamation, and Dr. COLEY in a few words acknowledged the honour. He pointed out that his method was absolutely scientific and was based on laboratory experiments.

THE NOTIFICATION OF TUBERCULOSIS IN IRELAND.

THE Tuberculosis Prevention (Ireland) Act, which received the Royal assent on Dec. 21st, 1908, encountered a good deal of opposition in its passage through Parliament and was considerably modified in the process. The contentious portion of the measure had reference to the notification of tuberculosis. The Government wished this to be compulsory throughout Ireland, but in order that the Bill might pass it was found necessary to introduce a clause permitting local authorities to decide whether notification should be put in force within their areas. The first clause of the Act, being the portion of most interest to the medical profession, was printed in THE LANCET of Dec. 26th, p. 1946. One of its requirements is that the Local Government Board for Ireland shall make regulations for carrying into effect the provisions of this section. The Board has accordingly issued two orders which have been recently published in the *Dublin Gazette*, came into force on July 1st, and are designated respectively "The Tuberculosis (Conditions of Notification) (Ireland) Order, 1909," and "The Tuberculosis Regulations (Ireland) Order, 1909." The first portion of the following quotations is taken from an accompanying "Memorandum on the Objects of the Act" also issued by the Board.

The main aim and object of the Act and of the regulations made under it is to place further power in the hands of local authorities for preventing the spread of tuberculosis. Part I. of the Act deals with the notification of tuberculosis and disinfection of premises used by tuberculous patients.

Notification of pulmonary tuberculosis.— ..... It was the desire of the legislature in introducing the principle of the compulsory notification of tuberculosis to safeguard the sufferers from unnecessary intervention or publicity to the greatest extent compatible with the public interest. Consequently the penal provisions applicable to other infectious diseases under the Public Health Act have not been extended to tuberculosis, and there is no power given to sanitary authorities for compulsory removal of patients to hospital. Moreover, it is expressly provided that no undue publicity shall be given to the particulars contained in the medical practitioner's certificate in a case of tuberculosis, and it will be the duty of sanitary authorities to give effect to the clear intention of Parliament by enjoining secrecy on all their officers. ..... In appointing officers or health visitors to carry out inspections and give advice, where possible, women of experience, such as trained nurses ..... should be employed ..... in advising the sufferers and their friends. ..... As soon as Part I. has become operative it will be the duty of every medical practitioner attending within the district ..... a "prescribed" case of tuberculosis to furnish particulars on an official form to the medical officer of health. ..... If a medical practitioner fails to comply with this requirement of the Act he renders himself liable to a penalty not exceeding £2.

Prescribed forms, stages, and circumstances.— ..... The Act does not apply the principle of notification indiscriminately to all cases of tuberculosis, but empowers the Local Government Board ..... to prescribe by order ..... the forms and stages of tuberculosis to which, and the circumstances in which, the provisions as to notification shall apply, subject ..... to the condition that only forms ..... liable to communicate the disease to other persons may be prescribed. In carrying out this ..... duty the Board have ..... prescribed that in every district to which Part I. of the Act extends Section 1 of the Act shall apply to ..... tuberculosis of the lung at any stage at which the sputum discharged by the person suffering is in the opinion of the medical practitioner attending on such person liable to communicate the disease to other persons. Provided that the said section shall only apply ..... where the person suffering—(1) habitually sleeps or works in the same room as any other person or persons not so suffering; or (2) is employed or engaged in handling, preparing, or distributing milk, meat, or any other article of human food intended for sale to the public. A medical practitioner is therefore only obliged to notify such cases as comply with these conditions. .....

Fees for notification.—The medical practitioner is entitled to be paid by the sanitary authority in respect of each notification duly sent by him a fee of 1*s.* if the case occurs in an infirmary, public hospital, or workhouse, or of 2*s.* 6*d.* if the case occurs elsewhere; but it is expressly provided in the Act that only one notification fee shall be paid by the sanitary authority in respect of the same patient.

Disinfection in cases of tuberculosis.— ..... It will be competent for the sanitary authority to exercise their powers under Section 2 of the Act for preventing the spread of the disease, which consists of the application of certain sections of the Public Health Acts relating to infectious disease ..... to require the cleansing and disinfecting of any house or part thereof where such a course is certified by ..... any ..... registered medical practitioner as likely to prevent or check the spread of tuberculosis. ..... The sanitary

authority, or the medical officer of health acting under a formal authorisation, may require the delivery of infected articles ..... for disinfection. ..... Compensation for unnecessary damage incurred in the process of disinfection may be paid. Temporary shelter or house accommodation shall be provided free of charge for ..... any family ..... compelled to leave their dwelling while disinfection is being carried out. ..... A penalty not exceeding £5 is imposed for obstructing a duly authorised officer ..... in carrying out ..... disinfection, and the officers are given a right of entry. .....

Hospitals and dispensaries.—Part II. of the Act ..... deals with the provision by the council of any county (including the town council of a county borough), of hospitals, sanatoriums, and dispensaries for the treatment of the inhabitants of their county or county borough suffering from tuberculosis ..... .

Miscellaneous provisions.—Part III. of the Act ..... contains provisions intended to deal with the prevention of tuberculosis. Sanitary authorities ..... may arrange for public lectures and for the distribution of literature on subjects relating to tuberculosis, and they may provide drugs and appliances, for example, spitting flasks. ..... Power is given to county councils to appoint a bacteriologist, being a medical practitioner, for the examination of meat or milk or milk products, and of sputum or pathological specimens. ..... In any county in which a bacteriologist has been appointed power is given to any medical officer of health ..... to take samples of milk or milk products for examination or analysis. ..... Penalties for obstruction are imposed, amounting in the case of a first offence to £20. ..... Where a veterinary surgeon certifies any milch cow to be affected with tubercular disease of the udder the sanitary authority may cause the animal to be slaughtered and may pay the owner compensation, the amount of which ..... shall not in any case exceed £10. The carcase ..... shall be ..... disposed of as the circumstances require. .....

It is not our purpose on the present occasion to make any detailed reference to the Act as a legislative measure, but merely to mention some obvious features of the instructions issued by the Local Government Board for Ireland in its Memorandum and Orders. Speaking generally, and keeping in mind the Parliamentary exigencies already mentioned, we believe that the Board has been actuated by an earnest desire to make the new legislation acceptable to the public. This is essential, for, as we have often remarked, no scheme for the prevention of epidemic disease can be permanently successful without the intelligent coöperation of a considerable section of the community. On the other hand, we think that the instructions are highly unsatisfactory from the medical point of view, and that there is good reason for the misgivings expressed by our Dublin correspondent in THE LANCET of July 10th. In each of the Orders a paragraph is quoted from the Act in the following terms:—

> If any medical practitioner attending on any person within any district to which Part I. of the Act extends becomes aware that that person is suffering in any prescribed circumstances from tuberculosis of any prescribed form or at any prescribed stage, the medical practitioner shall within seven days after he becomes aware of the fact send to the medical officer of health a certificate in the prescribed form and containing the prescribed particulars.

Definitions of the prescribed circumstances, form, and stage will be found in the preceding quotations from the Memorandum. Let us assume that a patient of the wage-earning class, such as a shop assistant, a clerk, an artisan, or a laundry ironer, comes to a surgery complaining of cough, expectoration, and loss of appetite, but nevertheless in full employment. The clinical history and the physical signs of pulmonary tuberculosis may be so obvious that there would be no difficulty in certifying the sputum to be infectious without bacteriological tests, but the medical practitioner is placed in the dilemma that the patient probably works in association with healthy persons and is therefore presumably notifiable. Inquiries concerning his fellow workers and previous medical advisers would arouse the patient's suspicions and trustworthy answers could not always be expected. If the practitioner fails to notify a case he takes the risk of being prosecuted and fined £2. If he is informed that the patient's fellow workers are healthy he perceives that the case is notifiable according to the statute, but he feels that in sending a statutory notification to the proper quarter he is taking the risk of receiving no fee because the sanitary authority may in reply inform him that the case has been notified already. If the patient is, or claims to be, married the case is notifiable when the partner is healthy, but not so when the partner is tuberculous. How is the practitioner to ascertain this without an examination of the other individual, who probably does not want to be examined and has no intention of paying a fee? The inconsistencies and difficulties of the practitioner's position are so obvious that there is no need of further examples. In short, it would be amply sufficient to ask the practitioner to notify the patient's name and address, together with a certificate that he suffers from tuberculosis in an infective stage, leaving the question of "prescribed circumstances" to be investigated by the officials of the sanitary authority.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on July 8th, the President, Sir HENRY MORRIS, Bart., being in the chair.

The PRESIDENT reported the result of the annual election of members of Council, as already reported in THE LANCET, and Sir W. Watson Cheyne, Mr. R. Clement Lucas, and Mr. Harrison Cripps were introduced, and, having made declarations in the terms of the oath prescribed by the Charter of 1800, took their seats in the Council.

A report was received from the museum committee with reference to the revision of the pathological catalogue, and the recommendations of the committee were approved; these included, among others, the appointment of a pathological assistant in the museum and the appointment of an expert to advise as to the gynæcological specimens. The best thanks of the Council were given to the authorities of the Egypt Exploration Fund for their valuable gift of 83 skulls of the Sixth Dynasty, recently found at Abydos in Egypt.

An address was read, which had been presented by the President, on behalf of the College, to the chancellor, masters, and scholars of the University of Cambridge on the occasion of the commemoration of the centenary of Charles Darwin's birth. The best thanks of the Council were given to the President for preparing the address.

The following lecturers were appointed for the ensuing year:—Hunterian professors: Dr. Arthur Keith, four lectures on the Anatomy of the Negro and Negroid Races; Mr. W. S. Handley, two lectures on the Surgery of the Lymphatic System; Mr. George Coats, two lectures on Congenital Abnormalities of the Eye; Dr. R. Horace Paramore, two lectures on the Functions of the Pelvic Floor Musculature; and Dr. C. Bolton, two lectures on the Pathology of Gastric Ulcer. Arris and Gale lecturers: Mr. Sydney R. Scott, one lecture on the Physiology of the Human Labyrinth; and Dr. Peter Thompson, two lectures on the Erect Attitude, its Adoption, Maintenance, and Failures, with Especial Reference to Certain Surgical Conditions. Erasmus Wilson lecturer: Mr. Samuel G. Shattock, six demonstrations on Surgical Pathology. Arnott demonstrator: Dr. Arthur Keith, six demonstrations of the Contents of the Museum.

Mr. H. T. Butlin was unanimously elected President, and Mr. Pearce A. Gould and Mr. Clement Lucas were appointed Vice-Presidents.

The next meeting of the Council will be held on Thursday, July 29th.

MEDICINE AND THE LAW.

More about the Workmen's Compensation Act, 1906.

IN a recent letter to our columns[1] Mr. Albert Benthall made the recommendation that when an accident has incapacitated a workman it is in the interest of the employer to pay the half wages required by the Workmen's Compensation Act with promptitude, and also to see that the workman is receiving proper medical attention and nursing, as this will in many cases shorten the period of invalidism. This sound advice might be taken notice of by insurance companies, who presumably are usually responsible for the attitude adopted by the employer, and would be applicable to cases where there is no doubt as to the liability to compensate. The suggestion as to medical attention and nursing might often prove valuable in instances where the workman is honestly anxious to get well, but a substantial number of cases under the Workmen's Compensation Act have unavoidably formed the subject of legal intervention and one point seems to have been elicited with frequency—namely, that the injured man, supposing that he is injured, is not necessarily in a hurry to be declared sound again. It has, however, been more often the liability of the employer to compensate which has formed the subject of repeated argument than any question as to the duration and extent of the injuries.

The case of Craske *v.* Wigan, which was recently made the

[1] THE LANCET, May 29th, p. 1555.

subject of an appeal before the Master of the Rolls, Lord Justice Buckley, and Lord Justice Kennedy, from the award of the Gloucester county court judge, is worth recording briefly for medical readers. The applicant for compensation was a ladies' maid, who one evening sat sewing by an open window with an electric lamp near her. While she was so engaged a cockchafer flew into the room and in endeavouring to repel it as it hovered round her head she struck herself a blow with her knuckle in the right eye, inflicting injuries which resulted in her losing her sight in the organ. It is stated in one report which we have seen of this case that the work which the maid was engaged upon was not her mistress's but her own; the Court of Appeal does not, however, seem to have laid any stress on this, but in a judgment which distinguished the case from Andrew *v.* Failsworth (1904, 2 K.B. 32), Challis *v.* London and South-Western Railway Company (1905, 2 K.B. 154), and Rowlandson *v.* Wright (24 Times Law Reports, 852) decided against the claimant. The court held that it had to apply the words "arising out of" the employment to the accident, and not only the words "in the course of." It must be proved that the accident arose because of something that the workman was doing in the course of his work or because his work placed him in a position of peculiar danger, otherwise the accident would not be one "arising out of" the employment. The case is interesting because it lays down decisively the principle to be applied and it also illustrates the unlikely and unpreventable occurrences for which an employer has been asked to pay compensation under the Act. In another recent case (Charles *v.* Walker Limited) the facts surrounding the workman's death may usefully be noted. He had suffered injuries which necessitated the amputation of the index finger of his left hand, and just as he was recovering from the anæsthetic after this had been successfully carried out those operating decided to remove a tooth of which he had complained. A further anæsthetic was administered, the attempt to remove the tooth was unsuccessful, and the patient was removed to the ward and there died. The county court judge, in deciding on the claim of the widow that the death was the result of the accident found that it was at least as probable that it resulted solely from a spasm induced by an attempt to swallow blood oozing into the mouth owing to the second operation, as that it was due to the anæsthetic administered for the first operation, and that the claimant must consequently fail as she had to prove her case and had not done so. The Court of Appeal upheld this decision, being of the opinion that the county court judge had "rightly directed himself"—i.e., that he had rightly applied the legal principles which it would have been his duty to explain to a jury if there had been one to assist him in such a case. The Master of the Rolls concluded his judgment by saying that the county court judge was not satisfied, nor was he, that death resulted from the operation for the removal of the finger, and the widow had "failed to discharge the onus which lay upon her of proving this fact." In a third case (Ystradowen Colliery Company *v.* Griffiths) the workman, a collier, met with an accident which injured his knee. Owing to this injury he took more than two hours to reach his home, a distance of a mile and a quarter, on a cold day, with the result that he contracted pneumonia, and when he made his claim was incapacitated from work by bronchitis and chronic asthma. The county court judge had held that this was not the natural result of the accident, and that consequently the employers were not liable to pay full compensation. But the Court of Appeal held that this was wrong and remitted the case to the county court judge, saying for his guidance, in accordance with the case of Dunham *v.* Clare (1902, 2 K.B. 292), that the principle governing the matter was not what might be the reasonable, or probable, or natural result of the accident, but whether, in fact, the condition complained of was due to it. In the instance before them the county court judge must consider whether the workman's condition was a result of the accident in the sense that it was occasioned by the debilitated condition of the man immediately after the accident. This case should warn employers as to the desirability of giving prompt aid to their workpeople when it is possible to do so after accidents for which they may be liable, and it adds force to the suggestion of Mr. Benthall quoted above. A decision upon somewhat similar lines, in which an insurance company was held liable as for an accident where death from pneumonia followed a hunting fall, was reviewed in THE LANCET of Feb. 27th, p. 642. In another recent appeal under the Workmen's Compensation Act the claim was based upon lead-poisoning contracted by a seaman when engaged in painting on board his ship at sea. The county court judge refused compensation and the Court of Appeal upheld this decision upon the construction of the Act, which admittedly would have rendered the employers liable as for an accident if the lead-poisoning had been contracted in a factory or elsewhere ashore, and if the conditions of the Act with regard to certification by the factory surgeon of the district had been complied with. It was held, however, that the Act only contemplated and provided machinery for industrial diseases contracted where there was a district with a factory surgeon to certify when they occurred, and that, whether intentionally or not, seamen at sea had been omitted from the benefits of the section bearing upon the subject (Section 8). The Master of the Rolls observed in his judgment that it was "impossible to read this section without holding that it did not apply to the case of a seaman."

Dentistry by the Unqualified.

After more than one adjournment Mr. Garrett, sitting at the South-Western police-court, dismissed the summonses against two defendants, Oscar Farkasch and Joseph Leo Rosenscheim of "the London Hygienic Institute," under the Dentists Act alleging the use of descriptions in the conduct of their business implying that they were specially qualified to practise dentistry. At a previous hearing another Rosenscheim had been dismissed from the case owing to lack of evidence connecting him with the charges. A fourth man, Newman by name, was held to have made a representation which brought him within the Act, and was fined £5, with £5 5*s.* costs. The case was dismissed as far as it concerned the principals in a business (in which the person fined was employed by them) apparently on the grounds that the skill in dentistry which they advertised was not puffed in terms which professed qualifications of a registrable character. The learned magistrate expressed the view that any man was allowed by law to extract teeth; that if he chose to say that he extracted them well he was again within his rights; and that the defendants had vaunted their skill in this manner but without going so far as to claim special qualification within the meaning of the Act. In these circumstances the comment which suggests itself is that the policy of the Dentists Act, in which it resembles the Medical Acts, is ostensibly to confer a limited amount of protection upon those whose names are on the Dental Register, and to afford means to the more educated classes of the community of distinguishing between qualified and unqualified persons. For the less educated and intelligent section of the public it provides no protection whatever, either ostensibly or in fact, leaving them to the mercy of anyone who has the commercial energy to advertise, combined with the physical strength necessary for the extraction of teeth.

Mr. Brighouse and the Town Council of Warrington.

Mr. S. Brighouse, coroner for South-West Lancashire, recently selected the conclusion of an inquest at Warrington as an occasion for making public a correspondence which has passed between him and Dr. J. C. Hibbert, medical officer of health of Warrington, and for commenting upon it. The statement was made while the jury, assembled for the purpose of an inquest which had been concluded, were signing their verdict and had nothing to do with the matter before the court, the coroner apparently desiring to obtain in this manner for his opinions the publicity conferred by a report in the local newspapers. Mr. Brighouse began by stating that Dr. G. W. Joseph, a member of the Warrington town council, had called attention, in a discussion upon the report of the medical officer of health of the town, to the infantile death-rate and to the high percentage of uncertified deaths at Warrington. Dr. Joseph had referred to the certainty of an inquest being held as a deterrent to people who might otherwise be guilty of criminal neglect of their children, and had advocated the appointment of a separate coroner for Warrington on the ground that the coroner for the district (Mr. Brighouse) lived at a distance and exercised his jurisdiction over a wide area. Mr. Brighouse, in criticising these views, expressed the opinion that a coroner for Warrington would cost the ratepayers more than the existing system, and observed that he was speaking to the ratepayers by the

courtesy of the jury, to whom in form his remarks were addressed. He then proceeded to read and criticise an extract from an annotation which appeared in THE LANCET of Sept. 5th, 1908, p. 748, in which attention was called to the high percentage of uncertified deaths in certain towns, among which Warrington was specially mentioned. In that article, which was based upon the Registrar-General's returns for the first half of 1908, the proportion of cases in which there was no certificate to the total of deaths registered was given as 6·3 per cent. in Warrington, as contrasted with an average of 1·4 per cent. in England and Wales and an average of less than 1·0 per cent. in the 76 large towns, among which Warrington was included. Mr. Brighouse then read a letter received by him from Dr. Hibbert, referring to the article in THE LANCET and stating that the attention of the health committee had been called to the matter. From this letter the following passage may be quoted: "The only reason I can ascertain for this high figure is the small percentage of inquests held on deaths uncertified by a doctor." Mr. Brighouse had replied in a letter which he also read. It began with a disquisition upon the duties of a coroner as defined by Section 3 of the Coroners Act, 1887, and went on to indicate the practice followed by him in these terms: "In 15 of these cases (18 deaths reported by the Warrington police in three months and upon which no inquests were held) a medical officer conversant with the case had been sent by the police and had expressed an opinion as to the cause of death which enabled me to dispense with an inquest. If in the face of these expressions of opinions by medical men I had held inquests I should have been intruding without adequate cause upon the privacy of a family in distress. In one of the remaining three cases the lady sanitary inspector of the Warrington corporation, together with the midwife, was present at the death of the child. ..... In the remaining two cases the police reports conveyed sufficient information to me to enable me to come to the conclusion that the deaths were from natural causes." The letter containing this passage concluded with the suggestion that "if the writer in THE LANCET proposes that in every case where a medical man is unable to certify as to the cause of death there should be an inquest held by me, then it will follow that there must be a post-mortem examination, and he had better place himself in communication with the county council of Lancashire and then come and sit with me when I hold unnecessary inquests and hear what the relatives have to say in the matter. The Coroners Act of 1887 has to be construed in a common-sense way, and I trust that I carry out the duties attaching to my office so as to comply with the Act of Parliament and at the same time not to wound the feelings of those who are in sorrow and distress." Another letter, also written by Mr. Brighouse to the medical officer of health, was then read. It contained as a typical instance of an uncertified death not made the subject of an inquest by the coroner the case of the wife of a member of the Warrington town council who, having been long in delicate health and under the care of a medical practitioner, died when an interval of six months had elapsed since her medical attendant had last visited her. Such a case is so obviously not typical of those under discussion that no comment is needed; but the letter concludes with another appeal of a similar character to those already quoted: "What does THE LANCET think I ought to do under these circumstances—intrude into the privacy and sorrow of the family, order a post mortem and hold an inquest? Whatever THE LANCET may say I am not going to do it, and if I so acted under the circumstances above described I do not think I should stand well in the eyes of your town council." After reading a letter in reply from Dr. Hibbert, Mr. Brighouse concluded his address with a peroration in which he referred once more to his reluctance "to intrude into the privacy of families in the midst of their sorrows."

In commenting upon these remarkable utterances of a coroner we can do no better than again quote Dr. Hibbert, who wrote: "The main point, I think, which has exercised the minds of the health committee of Warrington is why the percentage of uncertified deaths in this borough should be so much higher than in most other districts. Is it to be inferred that coroners elsewhere unduly intrude without cause on the privacy of families in distress, and that in other districts inquests are held where a doctor, although not able to certify the cause of death, can nevertheless express an informal opinion as to its cause? I must say that as medical officer of health I have felt that the more frequent holding of inquests, especially in connexion with the deaths of infants, the causes of which are uncertified by a doctor, would tend to make careless parents more prompt in calling in a doctor to an ailing child and more careful about its feeding and general welfare." This puts the case against Mr. Brighouse's system quite clearly, and we note that he gave no information as to the proportion of infantile deaths among the 18 uncertified cases in which during three months he decided not to hold any inquest. The nature of the system under which he obtained through medical men the information necessary to enable him to form an opinion in 15 instances we do not know, nor do we understand how medical men could make sufficiently exhaustive inquiries to enable such a conclusion to be correctly arrived at in all cases without considerable intrusion upon the privacy of any families involved. Whence they derived authority to make such inquiries and whether they in fact made them we cannot discuss from the information upon the subject contained in Mr. Brighouse's speech. At this juncture the point for the attention of the Warrington town council is one worthy of their consideration, and we are glad to see that, having the reputation of their town at stake, they are weighing it seriously. It is, as Dr. Hibbert puts it, whether the coroner for South-West Lancashire is right and practically all the other coroners in England and Wales are wrong in their methods, and whether an appreciable amount of infant mortality (and a great deal of infant suffering not ending fatally) might be prevented by the strong probability of a stringent inquiry following when a child dies after receiving no medical attention. We are perfectly well acquainted with the provisions of the Coroners Act, 1887, Section III. They are not incapable of amendment and improvement, but the words "Where ..... there is reasonable cause to suspect" that the deceased "has died a violent or unnatural death or has died a sudden death of which the cause is unknown" are sufficiently wide to allow of an inquest being held in cases in which the immediate cause of death is natural and not obscure, but in which contributing causes of neglect or wanton exposure to risk may render inquiry very desirable. Such inquiry is likely to reveal or to disprove the existence of culpable conduct on the part of persons responsible when before an inquest there is only "reasonable cause" to suspect it, and few are likely to blame a coroner who is suspicious on such occasions. Mr. Brighouse thinks otherwise, but his appeals for the approval of those into whose family sorrow and privacy he does not wish to intrude carry their own condemnation. The Warrington town council can probably estimate the amount of family sorrow and privacy that would be outraged in such cases as the 18 to which he refers, and will no doubt be of the opinion that the functions of a coroner should be exercised tactfully and sympathetically but without regard for the praise or obloquy of the general public.

THE ROYAL BUCKINGHAMSHIRE HOSPITAL.—On July 3rd Sir Frederick Treves, accompanied by Lady Treves, paid a visit to the Royal Buckinghamshire Hospital at Aylesbury. Sir Frederick Treves, who has taken great interest in the planning of the recently completed extension of this hospital, was met at the door of the institution by the chairman of the board of governors, Mr. George Carrington, and the medical staff of the hospital. Sir Frederick Treves, after inspecting the new wing, congratulated the board of management upon the possession of a hospital completely equipped in accordance with the requirements of modern medicine and surgery. In appealing for financial support—£1800 is required to free the hospital from debt—Sir Frederick Treves pointed out that a properly equipped hospital was necessary in order that physicians and surgeons might retain their skill and ability. For this reason the rich benefited from the existence of a hospital quite as much as the poor. "If," said the speaker, "I hear anyone say, 'I decline to support hospitals as they are only for the benefit of the poor, whom I support in other ways,' I tell him to support a hospital for the benefit of the rich by keeping up the standard of medical and surgical science in the district."

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Leicester Borough.—The population of this borough was estimated in the middle of 1908 at 240,172, but Dr. C. Killick Millard thinks that this figure is too high if the basis of the number of inhabited houses be employed for the computation; he puts the population at 226,200. All the rates are, however, calculated on the Registrar-General's estimate. At the beginning of the nineteenth century the people of Leicester numbered only 17,005, and in 1851 only 60,584. In 1891 the borough boundaries were extended. The marriage rate has shown minor fluctuations but generally a steady decline; but in 1908, for the first time for six years, the births have shown no decrease. The death-rate, which in 1872–76 was 25·18 per 1000, was in 1908 under 13, and Dr. Millard, in claiming a large share in such reduction for preventive medicine, observes that, although during the past 33 years there have been six medical officers of health, the same chairman (Alderman Windley) has for the whole of this period presided over the sanitary committee. Amongst the improvements brought about in Leicester is to be included the reduction which has taken place in infantile mortality, which in 1892–96 was 194·4 per 1000 births, and which is now about 130 per 1000 births. But this mortality amongst illegitimate births is still sufficiently appalling—for 1905–08 no less than 357. The new Vaccination Act has not been without its influence even in Leicester. The number of vaccinations during 1908 decreased by 40 per cent., and the exemptions granted increased by 91 per cent. Enteric fever has undergone a marked decrease in Leicester during recent years, there having been only 48 cases with eight deaths in 1908. Dr. Millard points out that there has been a marked decline in the prevalence of this disease in the country as a whole, but that there are now few towns which have a lower death-rate than Leicester—i.e., 0·33 per 10,000. The remarkable reduction which has taken place is ascribed largely to the abolition of the Leicester pail closets, and Dr. Millard draws attention to the difference which obtains in enteric fever death-rate between Leicester and Nottingham, the latter town, which has retained its pail closets, showing but a very slight decline in the prevalence of the disease. For some years past a limited number of patients suffering from pulmonary tuberculosis have been admitted into one of the blocks of the isolation hospital, and Dr. Millard gives an account of some of the after-histories. The patients are admitted in the first instance for a month only, and at the end of that time, if the case is making satisfactory progress, a second month's stay is granted subject to a payment of 10*s.* weekly. Calmette's ophthalmic tuberculin test has been applied during 1908 both at the hospital and the town-hall upon patients sent for the purpose by medical men, but Dr. Millard thinks that although the test is of undoubted value it is neither entirely reliable nor free from the serious drawback of, at times, setting up troublesome conjunctivitis. He advises the employment of a weak solution in the first instance. The Notification of Births Act, 1907, has not yet been adopted in this town owing to the unwillingness of the medical practitioners, and a voluntary system is at present in vogue which does not seem to have been attended with signal success. There is a crematorium in Leicester, but its popularity is not, after an existence of over six years, very great, only 14 cases having selected this method of material dissolution during 1908. Dr. Millard states that in the whole country (13 crematoriums) there were 795 cremations in 1908, while on the continent during the same period 4050 persons underwent cremation. The fees for cremation at Leicester is £2 2*s.* for residents and £5 5*s.* for non-residents.

Southend Borough.—Dr. C. G. Pugh succeeded Dr. J. T. C. Nash as medical officer of health of this district in June, 1908, and the latter has contributed a short report for the first half of the year. Dr. Pugh is, however, responsible for the whole of the vital statistics. One of the most satisfactory features in the history of the borough during 1908 was the continued low infantile mortality, which amounted to only 93·62 per 1000 births, a rate which is slightly below that of the previous year, when it was 94·05 per 1000 births. Dr. Pugh emphasises the necessity for the provision of sanatorium treatment of pulmonary tuberculosis, and he hopes that when the additions now being made to the isolation hospital have been completed it may be possible to utilise one of the wards for the educational treatment of patients suffering from this disease. As in many other of our large towns, a marked diminution of enteric fever has taken place in Southend during the last ten years, the death-rate for 1908 being 0·5 per 10,000 of the population. Of the indigenous cases 13 were ascribed to shell-fish, and it is to be noted that in four cases the onset of the disease took place only a week after the consumption of the shell-fish. In some of the 13 cases which were associated with the eating of shell-fish other members of the family partook of the shell-fish at the same time, but, except in one instance, only one member of the family contracted the disease. But in three instances the only member of the family to be attacked was the one who had eaten shell-fish. With reference to the utility of the isolation hospital the medical officer of health remarks that the hospital problem hardly arises in a place like Southend, where it is obviously desirable that cases occurring in hotels or lodging-houses should be at once removed to hospital owing to the financial consequences involved. As so many of the ratepayers of Southend obtain a livelihood by letting rooms it is improbable that there will be found in the borough any serious question as to the value of these essential institutions.

Sunderland County Borough.—Dr. Henry Renney embodies in his report for 1908 an interesting table showing the number of children born per 1000 women at child-bearing age, the rates ranging from 146 in 1899 to 130 in 1908. In the matter of small-pox the medical officer of health utters a warning note concerning the sinister operations of the Vaccination Act, 1907, in consequence of which measure there were in 1908 445 "conscientious" objectors, as against 60 in 1907. The case mortality of diphtheria has shown a steady diminution since the year 1890, but the prevalence of the disease, as measured by the notifications, has shown a marked increase during the last four years. For the last eight years the corporation has rented beds at the Stanhope sanatorium, and during that period 69 consumptive patients have undergone treatment therein. Of this total 40 are now dead, two are ill, and eight cannot be traced, while 19 are either "well" or "fairly well." Of the 21 patients who are still under observation two have been discharged nearly eight years and others from three to six years. Dr. Renney remarks that although sanatorium treatment arrests the disease it does not always prevent a recurrence, and hence the necessity for placing the patients under favourable conditions after discharge. This is unfortunately not very easy of accomplishment owing to the indisposition on the part of employers of labour to engage the once tuberculous, a fact which is becoming more and more apparent every day. These objections are due partly to an unreasonable dread of infection, partly to a belief that sanatorium treatment tends to induce slackness as regards work.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7786 births and 3711 deaths were registered during the week ending July 10th. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 12·6 to 11·8 per 1000, was again so low as 11·8 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 14·0 per 1000, against 14·9 and 13·7 in the corresponding quarters of 1907 and 1908; the mean rate in London during last quarter did not exceed 13·5, against 14·0 and 12·7 in the two preceding corresponding quarters. The lowest recorded annual death-rates in the 76 towns last week were 4·5 in King's Norton, 4·9 in Hornsey, 5·2 in Willesden, and 5·6 in Tottenham, all being distinctly suburban districts; the rates in the other towns ranged upwards, however, to 16·8 in Middlesbrough and in Tynemouth, 16·9 in Wolverhampton, and 17·4 in Hanley. In London the recorded death-rate last week did not exceed 12·0, showing, however, an increase upon the exceptionally low rate in the previous week. The 3711 deaths in the 76 towns last week from all causes showed a further decline of 22 from the decreasing numbers in recent weeks, and included 341

which were referred to the principal epidemic diseases, against numbers declining from 393 to 321 in the four preceding weeks; of these 341 deaths, 138 resulted from measles, 64 from diarrhœa, 59 from whooping-cough, 39 from scarlet fever, 32 from diphtheria, and nine from "fever" (principally enteric), but not one from small-pox. The 341 deaths from these epidemic diseases last week were equal to an annual rate of 1·1 per 1000, against 1·0 in the previous week. No death from any of these epidemic diseases was registered last week in Stockport, Hornsey, Rochdale, Aston Manor, or in nine other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·1 in Walsall, 3·3 in St. Helens, 4·6 in Coventry, and 5·0 in Wolverhampton. The fatal cases of measles in the 76 towns, which had declined in the four preceding weeks from 186 to 129, rose again last week to 138, and caused annual death-rates ranging upwards to 2·6 in Walsall, 3·0 in West Bromwich, 4·6 in Coventry, and 5·0 in Wolverhampton. The 64 deaths attributed to diarrhœa showed an increase of 15 upon the number in the previous week, and exceeded those returned in any preceding week of this year. The deaths from whooping-cough, which had been 57, 63, and 70 in the three previous weeks, declined again last week to 59, and caused the highest death-rates, 1·1 in Huddersfield, 1·2 in Derby, and 1·5 in Middlesbrough. The 39 fatal cases of scarlet fever showed a further slight increase upon the low numbers in the two preceding weeks, and included 15 in London and its suburban districts, four in Liverpool, eight in Manchester and Salford, and two in Newcastle-on-Tyne. Of the 32 deaths assigned to diphtheria, exceeding the number in the previous week by four, 13 occurred in London and its suburban districts, three in Manchester and Salford, and two each in Brighton, Southampton, and Birmingham. Only nine deaths were referred to "fever" in the 76 towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily increased in the five preceding weeks from 2228 to 2537, had further risen to 2647 on Saturday last; 371 new cases of this disease were admitted to these hospitals during last week, against 468, 368, and 390 in the three preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 155 and 158 in the two previous weeks, declined again to 154 last week, but exceeded the corrected average number in the corresponding week of the five years 1904–08 by 28. The deaths in London directly referred to influenza declined last week to seven, from 13 and 11 in the two preceeding weeks. The causes of 28, or 0·8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. The causes of all the deaths registered during the week were again duly certified in London, Leeds, Bristol, West Ham, Bradford, Sheffield, Newcastle-on-Tyne, and in 52 other smaller towns; the 28 uncertified causes of death in the 76 towns included six in Liverpool, five in Birmingham, and two both in Sunderland and Reading.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 871 births and 462 deaths were registered during the week ending July 10th. The annual rate of mortality in these towns, which had been equal to 12·7 and 13·3 per 1000 in the two preceding weeks, declined again to 12·9 in the week under notice. During the 13 weeks of last quarter the death-rate in these Scotch towns averaged 16·0 per 1000, while in the 76 large English towns the mean death-rate during the same period did not exceed 14·0. The death-rates last week in these Scotch towns ranged from 11·5 in Greenock and 12·2 in Glasgow, to 14·1 in Aberdeen and 14·6 in Leith. The 462 deaths from all causes in the eight towns showed a decline of 15 from the number returned in the previous week, and included 36 which were referred to the principal epidemic diseases, against 56, 54, and 37 in the three preceding weeks. These 36 deaths were equal to an annual rate of 1·0 per 1000, corresponding with the rate in the previous week; the rate last week from the same epidemic diseases in the 76 large English towns was equal to 1·1 per 1000. Of the 36 deaths from these epidemic diseases in the Scotch towns, 12 resulted from whooping-cough, 12 from diarrhœa, seven from measles, two from both scarlet fever and diphtheria, and one from "fever," but not one from small-pox. The 12 fatal cases of whooping-cough showed a further slight decline from recent weekly numbers and included five in Glasgow and four in Edinburgh. The 12 deaths attributed to diarrhœa, exceeded those returned in the previous week by one; five occurred in Glasgow and four in Dundee. The fatal cases of measles, which had been 13, eight, and five in the three previous weeks, were seven last week, of which four occurred in Paisley and two in Glasgow. Both the deaths from scarlet fever were returned in Glasgow; and of the two from diphtheria, one each occurred in Glasgow and in Edinburgh. Only one death was referred to "fever" in the eight towns, and was certified as typhus in Dundee. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 64 and 71 in the two preceding weeks, declined to 61 in the week under notice, but exceeded the number in the corresponding week of last year by ten. The deaths in the eight towns last week included 25 which were referred to different forms of violence, of which 13 occurred in Glasgow, five in Aberdeen, and three in Edinburgh. The causes of 17, or 3·7 per cent., of the deaths in the eight towns last week were uncertified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 15·7, 19·6, and 18·5 per 1000 in the three preceding weeks, declined again to 15·6 in the week ending July 10th, a lower rate than in any previous week of this year. During the 13 weeks of last quarter the death-rate in the city averaged 20·9 per 1000, whereas the mean rate during the same period did not exceed 13·5 in London and 15·8 in Edinburgh. The 119 deaths of Dublin residents from all causes registered last week showed a further decline of 32 from the numbers returned in the two preceding weeks, and included but three which were referred to the principal epidemic diseases, against eight and 13 in the two previous weeks. These three deaths were equal to an annual rate of but 0·4 per 1000, the death-rate from these same epidemic diseases being equal to 1·0 in London and 0·9 in Edinburgh. Of the three deaths from these epidemic diseases in Dublin last week, two resulted from diarrhœa and one from diphtheria, but not one from measles, scarlet fever, whooping-cough, "fever," or small-pox. The 119 deaths at all ages included 21 of infants under one year of age and 32 of persons aged upwards of 60 years; both these numbers showed a considerable decline from the numbers in the previous week. Three inquest cases and two deaths from violence were registered during the week; and 49, or 41·2 per cent., of the deaths occurred in public institutions. All the causes of death registered in the city last week were again duly certified either by a registered medical practitioner or by a coroner; in London, also, all the causes of death last week were duly certified, but in Edinburgh the proportion of uncertified causes of death was equal to 6·4 per cent.

VITAL STATISTICS OF LONDON DURING JUNE, 1909.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·5 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 5·9, 5·4, and 6·1 per 1000 respectively. The lowest rates last month were recorded in Kensington, Hampstead, Stoke Newington, Holborn, Finsbury, and Camberwell; and the highest rates in Paddington, Chelsea, the City of Westminster, St. Marylebone, Lewisham, and Woolwich. The prevalence of scarlet fever again showed an increase last month; among the various metropolitan boroughs this disease was proportionally most prevalent in Paddington, Chelsea, the City of Westminster, St. Marylebone, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 2539 scarlet fever patients at the end of last month, against 2412, 2143, and 2207 at the end of the

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1909.

(Specially compiled for THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1909.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,833,938	—	1933	577	2	83	1	33	374	12	3015	6·5	—	240	38	34	109	—	10	—	64	495	1·1	5137	11·1	84
West Districts.																									
Paddington	151,955	—	88	21	—	4	—	—	8	1	122	8·4	—	12	2	1	—	—	1	—	3	19	1·3	174	11·9	84
Kensington	183,683	—	40	14	—	6	—	1	16	—	77	4·4	—	7	1	2	7	—	—	—	3	20	1·1	180	10·2	108
Hammersmith	125,704	—	50	25	—	—	—	2	6	1	84	7·0	—	23	3	4	4	—	—	—	3	37	3·1	157	13·0	104
Fulham	176,406	—	59	34	—	4	—	4	14	—	115	6·8	—	22	—	1	4	—	1	—	4	32	1·9	187	11·1	112
Chelsea	75,249	—	79	10	—	2	—	—	2	—	93	12·9	—	—	1	1	1	—	—	—	1	4	0·6	70	9·7	52
City of Westminster	168,883	—	115	20	—	—	—	—	19	—	154	9·5	—	4	3	1	3	—	—	—	2	13	0·8	171	10·6	100
North Districts.																									
St. Marylebone	126,027	—	63	10	—	2	—	—	21	—	96	7·9	—	2	1	—	1	—	—	—	2	6	0·5	144	11·9	57
Hampstead	94,185	—	22	4	—	1	—	—	3	1	31	3·4	—	3	1	—	4	—	1	—	—	9	1·0	75	8·3	77
St. Pancras	237,422	—	70	26	—	4	—	2	9	—	111	4·9	—	8	—	4	4	—	—	—	1	17	0·7	244	10·7	77
Islington	351,202	—	128	33	—	5	—	1	15	—	182	5·4	—	22	2	1	6	—	1	—	2	34	1·0	363	10·8	91
Stoke Newington	54,423	—	5	4	—	—	—	—	1	—	10	1·9	—	—	—	—	2	—	—	—	—	2	0·4	29	5·6	42
Hackney	237,601	—	65	28	—	6	1	3	22	2	127	·6	—	2	2	—	2	—	1	—	4	11	0·5	206	9·0	66
Central Districts.																									
Holborn	53,802	—	8	11	—	1	—	—	2	—	22	4·3	—	4	—	—	1	—	—	—	1	6	1·2	62	12·0	70
Finsbury	96,289	—	20	11	—	1	—	—	10	—	42	4·6	—	18	—	—	6	—	—	—	2	26	2·8	145	15·9	84
City of London	18,193	—	6	3	—	—	—	—	1	—	10	5·7	—	—	—	—	—	—	—	—	—	—	—	40	22·9	227
East Districts.																									
Shoreditch	114,802	—	42	22	—	3	—	1	9	—	77	7·0	—	13	—	3	7	—	1	—	—	24	2·2	133	12·1	74
Bethnal Green	131,316	—	56	9	—	2	—	1	21	1	90	7·1	—	7	—	1	4	—	—	—	3	15	1·2	170	13·5	111
Stepney	312,525	—	123	49	—	—	—	2	39	—	213	7·1	—	22	3	1	6	—	—	—	7	39	1·3	388	13·0	100
Poplar	171,965	—	70	24	—	2	—	1	14	1	112	6·8	—	17	1	—	8	—	1		4	31	1·9	219	13·3	114
South Districts.																									
Southwark	211,125	—	70	26	—	3	—	1	23	—	123	6·1	—	12	2	2	3	—	1			26	1·3	263	13·0	76
Bermondsey	127,569	—	37	12	2	6	—	2	11	—	70	5·7	—	1	—	2	10	—	—	—		17	1·4	184	15·0	145
Lambeth	324,188	—	142	28	—	6	—	3	16	2	197	6·3	—	9	2	2	6	—	1	—	4	24	0·8	321	10·3	52
Battersea	186,036	—	62	34	—	7	—	2	17	—	122	6·8	—	12	—	1	4	—	1	—	2	20	1·1	195	10·9	83
Wandsworth	297,646	—	126	23	—	7	—	3	11	2	172	6·0	—	8	4	1	6	—	—	—	2	21	0·7	272	9·5	61
Camberwell	283,022	—	63	21	—	1	—	1	25	—	111	4·1	—	8	4	1	4	—	—	—	3	20	0·7	293	10·8	
Deptford	118,583	—	26	15	—	1	—	—	18	1	61	5·4	—	—	2	1	3	—	—	—	—	6	0·5	112	9·8	89
Greenwich	111,014	—	53	10	—	7	—	—	6	—	76	7·1	—	—	1	—	1	—	—	—	—	2	1·9	82	7·7	57
Lewisham	160,749	—	86	27	—	2	—	—	5	—	120	7·8	—	—	2	2	2	—	—	—	1	7	0·5	124	8·0	66
Woolwich	133,374	—	159	23	—	—	—	3	10	—	195	15·2	—	4	1	2	—	—	—	—	—	7	0·6	134	10·5	66
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

three preceding months; the weekly admissions averaged 353, against 278, 262, and 318 in the three preceding months. Diphtheria was rather less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in Hammersmith, Fulham, Holborn, Shoreditch, Battersea, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1103, 1012, and 920 at the end of the three preceding months, had further fallen to 890 at the end of last month; the weekly admissions averaged 105, against 121, 109, and 108 in the three preceding months. The prevalence of enteric fever showed a slight increase last month; this disease was proportionally most prevalent in Paddington, Kensington, Chelsea, Hackney, Shoreditch, Bermondsey, Battersea, and Greenwich. There were 58 enteric fever patients in the Metropolitan Asylums Hospitals at the end of last month, against 87, 57, and 49 at the end of the three preceding months; the weekly admissions averaged nine, against seven, nine, and eight in the three preceding months. Erysipelas was proportionally most prevalent in the City of Westminster, St. Marylebone, Finsbury, Bethnal Green, Stepney, Southwark, and Deptford. The 33 cases of puerperal fever notified during the month included four belonging to Fulham, and three each to Hackney, Lambeth, Wandsworth, and Woolwich Of the 12 cases notified as cerebro-spinal meningitis, two belonged to Hackney, two to Lambeth, and two to Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the five weeks ending July 3rd the deaths of 5137 persons belonging to London were registered, equal to an annual rate of 11·1 per 1000; in the three preceding months the rates were 21·4, 15·0, and 12·9 per 1000. The lowest rates recorded last month were 5·6 in Stoke Newington, 7·7 in Greenwich, 8·0 in Lewisham, 8·3 in Hampstead, 9·0 in Hackney, and 9·5 in Wandsworth; the highest rates were 13·3 in Poplar, 13·5 in Bethnal Green, 15·0 in Bermondsey, 15·9 in Finsbury, and 22·9 in the City of London. The 5137 deaths from all causes included 495 which were referred to the principal infectious diseases; of these, 240 resulted from measles, 38 from scarlet fever, 34 from diphtheria, 109 from whooping-cough, ten from enteric fever, and 64 from diarrhœa, but not any from small-pox, from typhus fever, or from ill-defined pyrexia No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Chelsea, St. Marylebone, Stoke Newington, Hackney, Deptford, Lewisham, and Woolwich; and the highest rates in Hammersmith, Fulham, Finsbury, Shoreditch, Poplar, and Greenwich. The 240 fatal cases of measles were slightly below the corrected average number for the corresponding period of the five preceding years; the greatest proportional mortality from this disease occurred in Paddington, Hammersmith, Fulham, Holborn, Finsbury, Shoreditch, and Poplar. The 38 deaths from scarlet fever were nine fewer than the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Hammersmith, the City of Westminster, Wandsworth, Camberwell, and Deptford. The 34 fatal cases of diphtheria showed a decline of 13 from the corrected average number; the highest death-rates from this disease were recorded in Hammersmith, St. Pancras, Shoreditch, Bermondsey, and Woolwich. The 109 deaths from whooping-cough were 32 below the corrected average number for the corresponding period of the five preceding years; the greatest proportional mortality from this disease occurred in Hampstead, Finsbury, Shoreditch, Poplar, and Bermondsey. The ten fatal cases of enteric fever were considerably below the average; the ten deaths belonged respectively to Paddington, Fulham, Hampstead, Islington, Hackney, Shoreditch, Poplar, Southwark, Lambeth, and Battersea. The 64 deaths from diarrhœa were 35 fewer than the corrected average number; this disease was proportionally most fatal in Hammersmith, Bethnal Green, Poplar, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 16 per cent. below the average for the same period of the five preceding years.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 84 per 1000. The lowest rates of infant mortality were recorded in Chelsea, St. Marylebone, Stoke Newington, Lambeth, Wandsworth, and Greenwich; and the highest rates in Kensington, Fulham, the City of London, Bethnal Green, Poplar, and Bermondsey.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: H. W. Finlayson to the *Blake*; and H. E. Tomlinson to the *Assistance*. Staff-Surgeons: A. A. Forrester to the *Pyramus*, on recommissioning; A. F. Fraser to the *Terrible*, and to the *Flora*, on recommissioning; G. R. MacMahon to the *Terrible*, for medical charge on voyage to Colombo, and to the *Penguin*, additional, for Sydney Medical Depôt; W. L. Martin and S. H. Woods to the *Terrible*, and to the *Cambrian*, on recommissioning; R. Hughes to the *Terrible*, and to the *Psyche*, on recommissioning; P. F. Alderson to the *Vivid*, additional, for Pembroke Dockyard, temporarily; C. E. C. Stanford to the *Blenheim*; E. T. P. Eames to the *Terrible*, for voyage home; and D. V. Lowndes to the *Philomel*, on recommissioning. Surgeons: A. T. Rivers to the *Terrible*, and to the *Flora*, on recommissioning; J. Fullarton to the *Terrible*, and to the *Pioneer*, on recommissioning; F. R. Featherstone to the *Pembroke*, additional, for disposal; L. M. Morris to the Royal Marine Division, Plymouth; G. T. Verry to the *Lord Nelson*; G. O. M. Dickenson to Haslar Hospital; J. Bourdas to the *Terrible*, for voyage home; and W. E. Ormsby to the *Halcyon*, additional, for the *Skipjack*.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Notts and Derby Mounted Brigade Field Ambulance Lieutenant Alexander R. Tweedie to be Captain (dated March 27th, 1909).

2nd Northumbrian Field Ambulance: Second Lieutenant Arthur Cecil Hays McCullagh, from the Unattached List, to be Lieutenant (dated April 1st, 1909).

1st Northern General Hospital: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel John Victor Walton Rutherford, from the 1st Northumbrian Brigade, Royal Field Artillery, to be Lieutenant-Colonel (dated March 30th, 1909).

Attached to Units other than Medical Units.—Lieutenant Samuel Martyn to be Captain (dated April 1st, 1908).

For Attachment to Units other than Medical Units.—Henry Michael Bayer (late Surgeon-Lieutenant, 5th (Irish) Volunteer Battalion, The King's (Liverpool Regiment)) to be Captain (dated May 1st, 1909). Douglas George Rice-Oxley to be Lieutenant (dated May 19th, 1909).

ROYAL ARMY MEDICAL COLLEGE EXAMINATION.

The following is the list of prize-winners at the recent examination at the termination of the junior course at the College:—Lieutenant H. S. Ranken, R.A.M.C., the Herbert, De Chaumont, Tulloch Memorial, Ranald Martin, and Marshall Webb prizes; Lieutenant J. A. Manifold, R.A.M.C., first Montefiore prize; Lieutenant C. L. Franklin, R.A.M.C., second Montefiore prize; Lieutenant A. M. S. Jukes, I.M.S., Parkes Memorial prize; and Lieutenant B. Gale, I.M.S., Fayrer Memorial prize.

3RD SOUTH MIDLAND FIELD AMBULANCE.

The medical profession of Bristol afforded some practical evidence of their sympathy with the 3rd South Midland Field Ambulance section of the Royal Army Medical Corps by subscribing for a drum major's staff, which was presented to the corps on July 9th by the officer commanding the South Midland Division, Brigadier-General H. A. Raitt, C.B. There was a large attendance, including Dr. R. Shingleton Smith, Mr. F. Richardson Cross, and Lieutenant-Colonel A. W. Prichard (commanding officer of the corps). Brigadier-General Raitt in an interesting speech said that the corps deserved special recognition on account of its being amongst the first in England to reach its establishment.

TERRITORIAL NURSING.

A meeting of the nursing committee of the Gloucester

Territorial Forces County Association was held on June 28th at the Royal Infirmary, Bristol. The Duchess of Beaufort, who presided, said that the committee had to provide a nursing staff for the 2nd Southern General Hospital, consisting of two matrons, 30 sisters, and 88 nurses. She explained that to volunteer for the service entailed no obligation unless and until the Territorial Forces were mobilised. Miss Baillie, the organising matron, said that she had received a good proportion of the necessary applications, and it was decided on her recommendation to enrol these.

THE ROYAL MILITARY (FAMILIES) HOSPITAL, SHORNCLIFFE.

On July 10th Princess Christian of Schleswig-Holstein opened the new Military (Families) Hospital at Shorncliffe. Major S. H. Fairrie, R.A.M.C., explained to Her Royal Highness that the hospital had been constructed to supersede the old wooden hospital which had been in use for the past seven years. The present building had been erected at a cost of about £10,000, and it would accommodate 35 in-patients.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on July 13th, Sir C. J. Thomas, K.C.B., being in the chair, the sum of £55 was distributed among the several applicants.

There will be an examination for the rank of staff-surgeon at Devonport on July 27th and 28th, from 10 A.M. until noon and from 2 to 4 P.M. each day.

Correspondence.

"Audi alteram partem."

THE RESTRICTION OF UNQUALIFIED PRACTICE AND THE SALE OF SECRET REMEDIES IN GERMANY.

To the Editor of THE LANCET.

SIR,—In spite of our enlightened times quackery is still rampant to an alarming extent. It is a psychological symptom that does not fit in with the boasted results of compulsory education and sixpenny editions of monistic theories, especially when we find that not only the "ignorant" but also many who by their training or position ought to know better, entrust the care of their health to persons whose methods savour more of the medicine-man of darkest Africa than of the exponent of those achievements that may well be termed the greatest and noblest fruits of man's ingenuity for the benefit of his fellow creatures. The action of the General Medical Council towards deleting this blot on our vaunted civilisation [1] should find the warm support of all who really profess to take an interest in their brethren's health.

As this question is likely to be prominently before the public, a *résumé* of the recent efforts made in Germany in this direction should prove of interest to those best placed to judge of the efficiency and likelihood of success of the measures to be taken. As stated in the report issued by the Unqualified Practice Prevention Committee of the General Medical Council, the position in Great Britain and Ireland is to a great extent similar to the conditions existing in Germany. The art of healing in Germany is free to all except pharmacists who may wish to pursue this calling, the only restriction being that potent drugs may only be dispensed upon a qualified practitioner's prescription. Recently, however, the numerous unfortunate results attending the effects of indiscriminate doctoring have led to legal proceedings, the law regarding such cases as coming within the scope of the paragraphs affecting "bodily injury caused by carelessness," and has meted out punishment accordingly. The Government of the Fatherland, ever mindful of safeguarding the health of its citizens, has sought to accomplish this object by legislation directed against two evils: secret remedies and, recently, unqualified practice. The imperial law for the regulation of the sale of secret remedies has been in force for some time. Briefly, it forbids the public advertisement of 153 preparations, or the inclusion of any testimonials or vaunting recommendations referring to the supposed curative properties of the preparation in question. Further, the pharmacist has to assure himself that no potent drugs are contained, which may be sold only on production of a qualified practitioner's prescription. A list of preparations has been elaborated, including a large number of the more known patent remedies, against which these regulations are specially directed. In Table B, which contains the names of 30 preparations which may only be dispensed upon a prescription, we find the following, amongst others: Tucker's asthma cure, Battle's bromidia, Blair's gout and rheumatic pills, Williams's pink pills, and Morison's pills. In the 123 articles in Table A which may be sold without a prescription, but to which the above restrictions apply, figure: Elliman's universal embrocation (excepting for horses), Mother Seigel's pills and syrup, Beecham's pills, and Ayer's sarsaparilla. The closing of the press as a medium for advertising was naturally a hard blow, and this is actively followed up by the publication of warnings against various other advertised preparations, which appear from time to time in local papers on behalf of the different municipal health boards. In spite of these measures it is officially stated that in the financial year of 1898–99 £1,500,000 were spent in Germany on secret remedies, while in the period from January to October, 1908, 31,200 kilogrammes were imported, paying £7800 in Custom dues, and 40,400 kilogrammes were exported out of Germany.

It is a regrettable fact to have to confess that these regulations have failed in their object—viz., of stamping out the "secret remedy nuisance," as it is termed in Germany, and this is very largely due to the attitude assumed by those for whose benefit they were elaborated. A love of the supernatural, impatience, and credulity are the great assets in favour of the vendor of the "cure all ills" preparation, and in many instances it would appear as if a special pride were taken in abetting him in eluding this law, which so many regard as being created for the pecuniary benefit of the physician. This negative result led to the elaboration of a proposed Imperial Bill to regulate unqualified practice, and to place the sale of secret remedies on a uniform basis throughout the empire. This project is at present under consideration at the hands of the governments of the various Federal States before discussion at no distant date before the Reichstag.

To absolutely forbid unqualified practice is held to be inopportune, but those persons who without possessing a legal qualification wish to practise the art of healing on man or beast as a business will be required to comply with the following conditions:—1. To inform the local police authorities in writing, at the latest on beginning to practise, of their dwelling place and business address; this applies equally to any change of address or alteration in the "working." (The word "Betrieb" places this "traffic" on a par with a factory or a railway line.) 2. "Tradespeople of the above kind" (*sic*) will, upon demand, be required to supply the police authorities with full information regarding their antecedents and personal circumstances, as far as affecting their trade, especially, however, regarding their education and previous occupation. They will also be required to keep business books, which must on demand be produced and laid before the police authorities. Paragraph 3 is the most interesting, as it strictly limits the scope of work open to the enterprising quacks ready to comply with the above regulations. They are forbidden to treat either man or beast without in person conducting an examination; this excludes treatment by letter. In dealing with human beings, the treatment of syphilis, gonorrhœa, or chancre by such person is prohibited; this also applies to treatment by means of mystic procedures, use of hypnotism, or of anæsthetics not having a purely local action. The police are empowered to stop the further treatment of persons suffering from contagious diseases on the schedule of one of the States; or of affections dangerous to the community at large. Permission to exercise unqualified practice may be refused, or a licence cancelled and further practice rendered illegal on the following grounds:—(1) if facts can be adduced proving that the exercise of this trade is likely to be injurious to the health of man or animal treated, or liable to endanger life; (2) if the clients are exploited in a swindling manner; or (3) if the unqualified practitioner has been legally sentenced to punishment for contravening this law.

The second part of this projected Bill deals with the suppression of secret remedies and allied evils. Should it pass,

[1] THE LANCET, Jan. 23rd, 1909, p. 250

the Federal Council (Bundesrat) will be empowered to forbid the sale *and importation* of any contrivances or articles intended to prevent, alleviate, or heal illnesses, sufferings, or bodily injuries in man or beast, if their use is likely to prove detrimental to health, or if they are marketed in a manner intended to deceive or exploit the purchaser. A special commission is to be appointed to deal with such questions. More than half of the actual wording of the Bill is devoted to an enumeration of the punishment provided to deal with offenders against its provisions. False representations respecting the value or effects of such preparations in public advertisements will make the advertisers liable to a penalty of imprisonment for a period not exceeding one year, in certain circumstances coupled with a fine up to £150, or either of these punishments may be inflicted alone. Imprisonment up to six months and a fine not exceeding £75, or either form of punishment alone, will be incurred by whosoever publicly offers to treat persons or animals by mail; publicly advertises or recommends remedies, articles, or methods intended to prevent, alleviate, or cure venereal diseases, remove sexual impotence, increase sexual appetite, prevent conception, or procure abortion. The same penalties will be provided for whoever publicly advertises or recommends remedies, &c., intended to alleviate, prevent, or heal illnesses, suffering, or bodily injuries in man or beast without clearly indicating the composition and proportion of the ingredients of the preparation or the material point in the method advertised.

Unqualified persons, not registered according to this Act, who undertake upon payment to treat man or beast are liable to a fine not exceeding £7 10*s*. or imprisonment. Should such treatment be undertaken in a case where delay would prove dangerous no punishment will be inflicted, provided that the treatment lasts only until the aid of a qualified practitioner is obtained and is not of a nature forbidden to unqualified but "registered" persons. These are the principal offences, but punishments are included to be inflicted for minor transgressions against the provisions of the Bill. One paragraph (12) of the proposed law is interesting, as it further aims at shattering the foundation upon which the business of the manufacturer of secret remedies rests—publicity. When the press was closed to a section of these manufacturers by the law for the regulation of the sale of secret remedies to which reference has been made already, advertisements were sent through the post or distributed from house to house. But paragraph (12) of the Bill states that public advertisement in the sense of this law will also apply to the distribution of recommendations, letters of thanks, testimonials, and similar communications to a large circle of persons.

German medical opinion, although in favour of the proposed regulations, does not consider them to be stringent enough in view of the vital importance of the issue at stake. Yet they represent the utmost that the Government hopes to achieve when the Bill will be under discussion. As the elaboration of a highly civilised state they command the greatest attention and indicate the lines upon which one country is actively engaged in repressing unqualified practice and its kindred evils. One important postulate is the active coöperation of the public; will it be forthcoming in England as well as in Germany?—I am, Sir, yours faithfully,

Darmstadt. G. P. FORRESTER.

RELATION OF ACIDOSIS TO THE CARBON DIOXIDE OF THE BLOOD IN DIABETIC COMA.

To the Editor of THE LANCET.

SIR,—In your issue of June 19th you inserted a communication by Dr. A. P. Beddard, Dr. M. S. Pembrey, and Dr. E. I. Spriggs with the above heading. I ask you to be good enough to insert this letter in reply to the line of argument they have set forth.

The problem dealt with is the source of the occurrence of death in association with diabetic coma. To go back to the beginning, the matter was referred to in an article by me entitled, "On the Acetone Series of Products in Connexion with Diabetic Coma," that was published in THE LANCET of July 12th, 1902. In this article I gave an explanation touching the causation of death which was afterwards taken exception to by the above-named authorities. In my lectures on the Pathology and Treatment of Diabetes recently delivered at the Royal College of Physicians of London, and published in THE LANCET,[1] I criticised the line of argument they had put forth, and the present discussion emanates from what I felt it necessary to state. They adduce some experimental work in support of their contention, and draw from it deductions which, owing to their omission of a factor of consideration in connexion with the matter, I do not concede they are justified in doing.

The point at issue is the position in which carbon dioxide stands in relation to the fatal termination that occurs. We know that the production of carbon dioxide is intrinsically mixed up with living action, and that its removal from its seat of generation in the tissues is essential to the continuance of life. All admit that it is through the instrumentality of respiratory action that its removal is effected. The mechanism of removal works in an automatic manner. A special adaptability is given to the blood circulating through the tissues for taking on the generated carbon dioxide through the medium of the alkaline ingredients with which it is provided. Further, the muscular action concerned in pumping off from the lungs the carbon dioxide that has reached the blood and is designed to be discharged from the body is placed under nerve control, which affords a means of adapting the work to be performed to the variable requirements existing under the different circumstances that may chance to present themselves. These are the fundamental facts met with, and a failure anywhere in the performance of what is wanted suffices to lead to an arrest of living action.

In my lectures I say, "The continuance of life is dependent upon the elimination of the carbon dioxide produced as a result of vital activity. The sodic carbonate and, to a certain extent, the sodic phosphate, are the cardinal agents for conveying the carbon dioxide from the tissues to the lungs. If through any abnormality there should be an entry of acid into the blood, establishing what is known as a state of acidosis, the alkaline base will be appropriated by it, and thence be prevented contributing to the transport function as normally designed it should do." In unison with this view interference with the working of the respiratory mechanism in operation is regarded as affording sufficient to account for the fatal issue in connexion with diabetic coma without bringing into the question any assumed outside or extraneous cause.

My opponents have put forward some experimental results that they have obtained as controverting the view to which reference has been made. Let us see in what position they stand under the light of critical examination.

Their experiments, in effect, concur in showing that diabetic coma blood is not to be taken as exempt from absorbing power over carbon dioxide. They contend that if the wrong procedure in acidosis were due to non-removal of carbon dioxide from the tissues the blood logically should not be able to take it up. "So long as the body is alive," they say, "it will continue to produce carbon dioxide. Whenever the blood is unable to remove it as fast as it is produced, carbon dioxide must accumulate in the tissues, and if it accumulates then its tension in the tissues must be raised." The raised tension spoken of they consider ought to render itself evident, which they state is not found to be the case. Again, "if the 'alkalinity' of the blood begins to fall, and if carbon dioxide begins to accumulate at an increased tension in the tissues, the blood in the capillaries must be exposed to an increased tension of carbon dioxide. And although the reduced 'alkalinity' of the blood might prevent its taking up a normal quantity of carbon dioxide, nevertheless such gas as the blood did take up would be under an increased tension." As a matter of fact, they assert, the tension, instead of being increased, is much below the normal value.

Their argument is based entirely on the effects of gaseous tension. They completely ignore any other point of consideration in connexion with the matter. Nothing is anywhere to be found in their communication about any other factor being concerned in the question. I ask if this is permissible, seeing that both in the case of oxygen and carbon dioxide, combination—in the one case with hæmoglobin and in the other with alkaline basic material—constitutes an all-important item of consideration in connexion with the gaseous transport service performed by the blood.

[1] Vide THE LANCET of Dec. 12th, 1908, p. 1727.

Obviously, when oxygen and carbon dioxide are respectively in their states of combination (whatever may be the precise degree of potency of combination that exists) they cannot exert the tension influence they are capable of doing when present in a free state. Throughout, carbon dioxide is dealt with as though it were existing in a free state. It is logical to infer that blood may be capable of taking up carbon dioxide when presented to it in a free state, whilst it may be incapable of doing so when it has to be dissociated from a pre-existing state of combination. Is it to be conceived that carbon dioxide as it is produced is thrown in a free state into the tissues? We know that it is produced, but we do not know the precise form of existence in which it first presents itself. For my own part, however, I consider that it ought to be regarded as existing in some form or other of combination, and that a dissociation operation has to be performed before it reaches the blood.

It is admitted that in advancing acidosis there is a concurrent descent in carbon dioxide elimination. This falls in intelligibly with the view that, through the abnormal acid development, the alkaline basic material of the blood, becoming saturated with fixed acid, loses its transport power in connexion with carbon dioxide. The manner in which the condition, even after it has advanced to the stage of coma, becomes rectified by the introduction of sodic carbonate into the blood equally tells in the same direction.

My opponents, in commenting upon my view, fail to put it in a correct form. They say, "This view is based upon the assumption that the decrease of carbon dioxide in the blood is primarily due to the inability of the blood to *combine* [the italics are mine] with more carbon dioxide than it is found to contain." The idea here conveyed does not strictly represent my contention. I hold that the blood with its lessened transport capacity arising from the loss occurring in its sodic carbonate content, which admittedly is the great source of its transport power, may not have the capability of dissociating and taking up carbon dioxide from the tissues, whilst still to a certain extent capable of taking it up when presented to it in a free form. I consider the circumstances existing justify this conclusion, and that to escape from error the matter requires to be looked at not only from one but from all points of view.

The hyperpnœa that is associated with diabetic coma fits in with the view that I contend for in connexion with the matter under consideration. I contend that it is owing to the respiratory mechanism being rendered ineffective that the result met with is attributable. The object of respiration is to provide for an adequate supply of oxygen to the tissues and an adequate removal of carbon dioxide from them. Let either of these operations be defectively carried out, and it will be found that the defectiveness shows itself by forced respiratory muscular activity being called into play in a manner representative of an effort of nature by compensatory action to set things right. In the ordinary course of events when carbon dioxide is not being removed from the tissues to a proper extent increased respiratory movement is automatically induced by the effect of the condition existing (I put it in this broad way) upon the respiratory nerve centre. This is exactly what is noticed in association with the state of breathing belonging to diabetic coma, and I consider that defective removal of carbon dioxide from the tissues is the rational factor to look to as standing at the foundation of what is observed. We know that acidosis by its effect upon the sodic carbonate of the blood impairs the transport power of the blood for carbon dioxide. We know also that the actual transport of carbon dioxide becomes correspondingly lessened as the acidosis advances, and if this lessening goes on it must necessarily follow that a point cannot escape being reached which is incompatible with the continuance of life. There exists manifest evidence of default of respiratory efficiency, and death is to be satisfactorily accounted for without going outside the faulty respiratory capacity.

Hyperpnœa is of itself indicative of the involvement of respiratory action in the issue. It reveals the fact that the respiratory mechanism is not automatically meeting the existing respiratory requirement. Douglas and Haldane, in an article on the Regulation of Normal Breathing, published last month in the *Journal of Physiology* (Vol. XXXVIII., No. 5), have brought the question under consideration in connexion with the effect of forced muscular exertion. They refer to the formation of lactic acid in the muscles as a result of excessive muscular work and to its leading to the production of hyperpnœa by its stimulating effect upon the respiratory centre. A close parallelism is to be traced, from what they say about fall of carbon dioxide alveolar pressure, between the state thus induced by a call upon respiratory action that cannot at the moment be adequately met and the state associated with diabetic acidosis. The respiratory capacity is in default from the excessive call in a direct manner made upon it in the one case, and may it not be rationally concluded that a similar state of default stands at the foundation in the other. It is clearly made evident that a low carbon dioxide alveolar pressure is not to be taken as meaning absence of want of more effective removal of carbon dioxide from the tissues.

Contending as I do that the view which refers the phenomena in diabetic coma to defective removal of carbon dioxide stands good, there is no need for seeking any other. Dr. Beddard, Dr. Pembrey, and Dr. Spriggs have reproduced in their article the view propounded by themselves and the comment made by me upon it in my College of Physicians' lectures. As I have nothing further to say upon this matter, I leave it in the position in which it stands.

I am, Sir, yours faithfully,

F. W. PAVY.

WHO SHALL INSPECT THE SCHOOL CHILDREN?

To the Editor of THE LANCET.

SIR,—May I supplement your remarks in a recent leading article as to the respective merits of inspecting school children in county areas by (1) medical officers of health; (2) other local practitioners; and (3) recently qualified inspectors *ad hoc*. Last first.

This third system, you say, "makes for unity of method." I beg to deny it. It gives temporary unity over width of area. But the inspectors, with very few exceptions, soon tire of inspecting 50 children a day and writing up the records; £250 a year does not satisfy them for long, and they go. The children they have seen are inspected by a different man on each triennial occasion. By the time the new man has assimilated his method to that of his predecessor he also goes. Nay, even the coördinator, the county medical officer, may go. The unity is lost. "It prevents, or should prevent, friction." On the contrary, it causes it. Even if the young inspector have tact, he takes long to know local conditions; he may never meet the local medical officer of health, and misunderstandings are easy. Several of his duties are also those of the medical officer of health; he will exclude contagious or infectious cases at his visit, but he must leave consequent action in their houses and school mainly to the medical officer of health and sanitary inspector. Is this likely to secure efficiency or prevent friction? "Dual control must obtain in certain particulars—and the arrangement is not without some advantages." There can be no advantages in duality of control.

The second system of employing local practitioners has the considerable advantage of making for unity in any one area over a length of time—longitudinal as opposed to lateral, chronologic to geographic, unity. But if you suggest a different practitioner for each school, how am I to secure lateral unity over the 250 schools in Herts? If, instead, you suggest grouping of schools, the advantage of employing local practitioners is gone. They will be inspecting each other's patients more than their own; they will not be in touch with the home conditions and parents of most of the children they inspect. Medical practices are not coterminous with school areas. And think of the friction then.

The first system of employing medical officers of health seems to me for the counties the only one feasible in the long run, supplemented, if needs be for the present, by the help of one or two local practitioners in the larger areas. Here is a compact body of chosen men, whose authority must already be recognised by their brother practitioners in regard to notification and sanitation. Sufficient lateral unity is secured without difficulty; longitudinal unity is secured, for each child and each district, even should the county medical officer be changed. Longitudinal unity is essential for the sake of the individual child, lateral for the sake only of statistics. But the latter is of very slight—if, indeed, of any scientific—value in the comparison.

Treatment is a different thing. The inspector gives the defective child a note to its parents to advise medical or domestic attention to a certain organ or condition of the body. Under the Children Act, 1908, Section 12, the parent is compelled to secure medical aid if required. But he gets it where he will, and no well devised system will give opportunity for influencing parents to leave their usual medical attendants. Above all, the employment of medical officers of health, the only body of men accustomed to consider prevention of disease in the mass, brings nearer the day, to which all authorities in public health appear to be looking forward, in which the medical inspection of school children will be a most essential part of the combined duties of medical officers of health uniformly, except in the large towns, throughout the country. Which system will best pave the way? I am, Sir, yours faithfully,

July 7th, 1909. F. E. FREMANTLE.

*** We feel that the very short experience of the inspection of school children which this country has had does not warrant anyone in speaking with Dr. Fremantle's emphasis. His statement (in which he denies the accuracy of our arguments) that medical inspectors will tire of their work, and that consequently the children will be continually inspected by new persons, is a prophecy the truth of which has yet to be gauged, especially as his words seem to carry with them the inference that the part-time medical officers of health, whose salaries are often quite small, will never tire of their work. We think that Dr. Fremantle overstates the claims of medical officers of health as experts in the "prevention of disease in the mass," and is generalising a little fearlessly from the position in Hertfordshire, which county is after all laterally, longitudinally, and geographically of limited area.—ED. L.

INSTRUCTION IN ANÆSTHETICS FOR DENTAL STUDENTS.

To the Editor of THE LANCET.

SIR,—The President of the College of Surgeons of England sees no objection to the publication of the accompanying correspondence; I should feel obliged therefore if you could find room for it in your next issue.

From the reply of the College I think it is apparent that, as far as general anæsthetics are concerned, the recent regulation is intended to apply only to the administration of nitrous oxide. I am, Sir, yours faithfully,

J. FREDK. W. SILK.

Devonshire-street, Portland-place, W.

[COPY.]

July 7th, 1909.

To the President of the Royal College of Surgeons of England.

DEAR SIR,—Our attention has been drawn to a regulation lately issued by the Council of the Royal College of Surgeons, by which, after October 1st next, candidates for the diploma "L.D.S." will be required to receive "a course of practical instruction in the administration of such anæsthetics as are in common use in dental surgery."

As teachers of anæsthetics at some of the principal medical schools in London we take the liberty of pointing out to you that this particular phrasing (in common use, &c.) has already been understood in some quarters to include such substances as ethyl chloride, ether, chloroform, and the chief local anæsthetics.

We can hardly believe that this interpretation was in the mind of the Council when the regulation was originally framed, for it is obvious that, if so interpreted, many dental students would, on the strength of such instruction, claim the right to administer chloroform and other drugs; a possibility which in our opinion would be highly objectionable and dangerous. We trust that the Council will see its way to issuing a further regulation, stating that the instruction is to be confined to the administration of nitrous oxide.

We have the honour to remain, yours obediently,

J. BLUMFELD, St. George's and St. Mary's Hospitals.
C. C. BRAINE, Charing Cross.
T. G. A. BURNS, Middlesex.
R. GILL, St. Bartholomew's.
R. J. PROBYN-WILLIAMS, London.
G. ROWELL, Guy's.
J. F. W. SILK, King's College.

[REPLY.]

Royal College of Surgeons, Lincoln's Inn-fields, W.C., July 9th, 1909.

GENTLEMEN,—I am desired by the President to inform you that he submitted your letter of the 7th inst. to the Council at their meeting yesterday, and that in reference thereto the Council adopted the following resolution, viz.: That the signatories to the letter be informed that the regulation to which they refer was adopted by the Council after full consideration of the different views which have been expressed regarding the administration of anæsthetics, and that the Council are not prepared to admit that the general anæsthetics specified by the signatories are "in common use in Dental Surgery," and must adhere to their decision.

I am, Gentlemen, your obedient Servant,

S. FORREST COWELL, Secretary.

TUBERCULOSIS DURING THE FIRST YEAR OF LIFE.

To the Editor of THE LANCET.

SIR,—It is hardly yet sufficiently realised that tuberculosis is a common affection during the first year of life and not infrequent in the first six months. The following statistics, kindly collected for me by Miss A. Sanderson, of a series of infants of this age recently under my care in the Belgrave Hospital for Children, show this very clearly. Total number admitted, 501; total number of deaths, 219; post-mortem examinations, 127; number found tuberculous, 17. Of these infants there were in the first three months of life, 2; second three months, 3; third three months, 6; fourth three months, 6. The youngest child was a girl of seven weeks with tuberculous bronchial glands. Holt found tuberculosis in 26 under six months (5 under three months), 31 in the second half year of life, and 32 between two and five years. Still gives figures, based on 500 consecutive cases, as 22 and 60 for the two half years, and 130 in the second year of life, as against Holt's 39 in the second year. If cases of tuberculous meningitis are taken we find such statistics as: 14 out of 67 under one year (Holt), 3 out of 63 (Oxley), 18 out of 130 (Still). Of 54 cases under five years, which I collected two years ago, 10 were under one year, and of these 3 were under six months. Of the 17 cases, 9 were miliary tuberculosis, 2 miliary tuberculosis and meningitis, 2 meningitis, 1 pulmonary tuberculosis and meningitis, 1 pulmonary tuberculosis, 1 tuberculous broncho-pneumonia, and 1 tuberculous bronchial glands.

The difficulty of obtaining accurate details of the previous diet renders any conclusions as to the mode of infection open to error. A boy, nine months old, who died from miliary tuberculosis, was said to have been breast-fed until five days before admission. A girl of 12 weeks had had cows' milk for a week, and her mother was probably tuberculous. A boy of nine months had been fed on various articles of food but no cows' milk; his father recently had died from "bronchitis." Two girls of five and six months had been partly bottle-fed; their fathers probably were phthisical. Another girl of nine months had a phthisical sister. A breast-fed girl of eight months, who died from tuberculous broncho-pneumonia, lost her father a week previously from phthisis. A boy of ten months, who had tuberculosis of the right lower lobe, was said to have been entirely breast-fed for nine and a half months. A child of four months was breast-fed for three months and then on the breast with Nestlé's milk and milk-and-water in addition; his mother suffered from "chest." In the other eight cases the possibility of infection through cows' milk was greater.

These few cases indicate the frequency of tuberculosis in the first year of life and the probability that many of them are due to direct infection from a phthisical relative. What is wanted is a careful record of cases in the better classes of life, showing exactly what the possibilities of infection from another or by milk may be. Provided that an infant is brought in contact with a phthisical nurse or relative, it is infinitely more probable that subsequent tuberculosis is due to direct infection rather than to the milk-supply.

I am, Sir, yours faithfully,

EDMUND CAUTLEY, M.D. Cantab.,
Physician to the Belgrave Hospital for Children and to the Metropolitan Hospital.

Upper Brook-street, July 8th, 1909.

SYMMETRICAL LIPOMATA OF THE BROAD LIGAMENTS.

To the Editor of THE LANCET.

SIR,—In the course of the pathological examination of the appendages in a case of ovarian fibroma and multiple fibroids of the uterus, removed from a woman, aged 51 years, by Professor H. Briggs, to whom I am indebted for the material, the condition of symmetrical lipomata of the broad ligaments was found. The tumour on the right side was a flattened ovoid, of the size of a

broad bean, lying between the layers of the broad ligament at the posterior aspect of the fimbriated end of the right Fallopian tube. It was soft in consistency, and on section presented the characters of a fatty tumour. The tumour on the left side was somewhat less flattened, and contained two minute thin-walled clear cysts; in size and position it corresponded closely with the tumour on the opposite side, and, except for the small cysts, was of a uniformly fatty nature. Microscopically the lipomatous nature of the tumours was fully established, together with the demonstration, in the tumour of the left side, of a columnar epithelial lining to the small cysts, suggesting an origin from Kobelt's tubules. Lipomata of the broad ligaments are so rare as to excite interest; the occurrence, however, of symmetrical lipomata in this situation is perhaps sufficiently uncommon to warrant publication. The tumours from their position and size must have been symptomless, but whether, as suggested by Hektoën, a trophic influence played a part in their etiology, it is not easy to determine.

I am, Sir, yours faithfully,

E. EMRYS-ROBERTS, M.D. Liverp.,
Demonstrator of Pathology, University of Bristol;
late Subcurator of the Pathological Museum,
University of Liverpool.

July 9th, 1909.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—I am much annoyed to find that certain daily newspapers have published portions of an article of mine which appeared in the *Practitioner* of this month. My permission was not asked for this proceeding, and, if it had been, would certainly have been refused.

This unwarrantable liberty is a sad example which too clearly illustrates the decay in good manners of the British daily press, which has now reached the low level of the American daily press. I think that, with some obvious exceptions, for the public press to discuss medical questions in their columns is a serious impropriety.

I am, Sir, yours faithfully,

DYCE DUCKWORTH.

July 9th, 1909.

THE ROUTINE USE, BY THE OPEN METHOD, OF A MIXTURE OF CHLOROFORM AND ETHER.

To the Editor of THE LANCET.

SIR,—Dr. Alexander Brown in THE LANCET of July 10th discusses the paper of the above title communicated by Dr. F. W. Hewitt and Dr. J. Blumfeld. He points to an apparent discrepancy between the authors' dictum in regard to the method of administration and the earlier writings of one of them (Dr. Hewitt), and he asks for guidance. As one who has in the past taken much interest in the study of inhalation methods, I may perhaps be able to throw some light upon the subject.

It is, I think, imperfectly appreciated how vastly different results may be obtained in accordance with simple variations in the technique of administration of anæsthetics on an open mask. I know from personal experience how one is liable to criticise the qualities of a particular sample of anæsthetic whilst overlooking the important bearing of the qualities of the method by which it is given. If a frame of the Skinner or Schimmelbusch type, covered with lint or closely woven flannel, be held so that it does not touch the patient's face, then it is not unusual to find that such mixtures as the A.C.E. or C.E. will not be efficient in inducing anæsthesia. If, however, the framework be adapted to fit closely but lightly upon the face, and the covering be formed of a loosely woven fabric, such as domette or a thin flannel, then an entirely different set of conditions regarding evaporation is set up. The respirations in this case pass wholly, or almost wholly, *through* the meshes of the fabric and not merely *over* its surface, and in this way a perfectly efficient concentration of vapour may be inhaled. It is indeed thus that the open ether method is rendered practicable, and it is from neglect of this simple principle that it fails.

This adaptation of frame and cover has a further highly important bearing upon the continued administration of vapours, for it presents the most favourable conditions under which the vapour strength may be regulated. By varying the proportional part of the total area of fabric (e.g., one-quarter, one-half, &c.) which is moistened with the anæsthetic, the percentage of vapour inspired is made to vary in accordance. The relation is certainly not in direct proportion, but it is sufficiently close to afford a greater control than may be effected by any way of using other forms of masks, either open, such as the ordinary Skinner's, or semi-open, such as the Rendle cone. There is also a decided objection to the inflated rubber pad which is fitted to the semi-open inhalers. In the absence of special precautions this is liable to induce a degree of obstruction to free respiration, and the substitution of a lightly resting metal frame results in a far happier type of breathing.

The open method of administering anæsthetics is capable of still more precise adjustment, and I think that the plan which I devised of using the A.C.E. mixture upon an open cover divided into four actual quadrants may be found to prove more efficient in less expert hands, but for a further account of these matters I may refer Dr. Brown to my papers in the *British Medical Journal* of August 4th, 1906, and Oct. 6th, 1907, p. 874.

Of the relative merits of the C_2E_3 mixture I have never had any personal experience, but I may perhaps be allowed to express the hope that Dr. Hewitt and Dr. Blumfeld will have success in their advocacy of a method which, of its kind, I am convinced will tend to afford the widest efficiency.

I am, Sir, yours faithfully,

A. GOODMAN LEVY.

London, W., July 13th, 1909.

DELAYED CHLOROFORM POISONING.

To the Editor of THE LANCET.

SIR,—I was very interested to see the account by Dr. T. C. Somerville of the cases of delayed chloroform poisoning in THE LANCET of July 10th as I have had a somewhat similar experience, although fortunately my cases did not terminate fatally. Case 1 was a patient to whom chloroform was administered for a difficult delivery. The patient was under the anæsthetic from about three-quarters to one hour and nothing abnormal was noted during the administration, but as she was recovering consciousness she vomited up a coffee-coloured material; this continued to be vomited for about four or five hours and then ceased and she made a good recovery. Case 2 was a child to whom A.C.E. was administered for the removal of enlarged tonsils and adenoids. This was the worst case and vomiting continued for three days and was very severe. The vomit in this case was coffee-coloured and great prostration and exhaustion followed. She recovered after careful treatment. Case 3 presented features practically identical with Case 1, but A.C.E. was the anæsthetic administered, and the vomiting did not occur till four hours after the return to consciousness. I have satisfied myself that these cases were due to the use of a cheaper chloroform, acetone chloroform, for they occurred during a period when I was using this chloroform, thinking it reliable and feeling satisfied that it was cheaper; but I discontinued it and again used the purest chloroform, and no further cases of the kind happened.

These cases occurred in general practice and I have not full notes of them, but the cases reported seemed to resemble my own; and I thought it might be of interest to make a report of them.—I am, Sir, yours faithfully,

W. H. PAYNE, M.R.C.S. Eng., L.R.C.P. Lond.
Vesta-road, Brockley, S.E., July 11th, 1909.

AN APPEAL.

To the Editor of THE LANCET.

SIR,—We beg to appeal to the readers of this journal for help in the sad case of the late Mr. C. E. Harris, Ph.D. He was for over four years the demonstrator of chemistry to the Royal Institute of Public Health, during which time he rendered faithful and valuable services both to the institute and to sanitary science by his teaching and research work. Although delicate and greatly handicapped through a serious spinal deformity, the result of an accident in early childhood, he continued cheerfully and bravely in his work. Even during his last illness he was at work until a few days before his death, which occurred on May 31st last.

He has left a widow and six children between 12 and four years old totally unprovided for. Whilst endeavouring with

the kind help of friends to obtain the admission of the children into suitable institutions, we are collecting a fund to provide for the urgent necessities of the family during the next few years. Any contributions sent to either of us will be gratefully received and acknowledged in this journal by

Yours faithfully,

CARL PRAUSNITZ, M.D. Breslau,
(Assistant Bacteriologist to the Metropolitan Asylums Board, late Demonstrator of Bacteriology to the Royal Institute of Public Health), "Normanton," Grove-road, Sutton, Surrey.
N. H. TURNER, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H.
(Demonstrator of Public Health to the Royal Institute of Public Health), 35, Highbury-grove, London, N.

July 10th, 1909.

A SYSTEM OF DIET AND DIETETICS.

To the Editor of THE LANCET.

SIR,—May I say at once I am quite in agreement with Dr. Cautley that a brief article on a system of diet cannot be expected to include all the minutiæ of its subject. At the same time I would assert that however brief the description may be it is indisputably necessary, if the diet is to be prescribed intelligently, that it shall include and correctly describe prominent essentials, such as those which I criticised in my last letter. I refer to quantity and number of meals.

With regard to quantity, I mentioned that a minimum of nearly 11 ounces of meat a meal was unduly large for the majority of cases, and it will be noted that Dr. Cautley, although with evident reluctance, now inclines to my opinion, since he says, "It is possible to give the food in *four* meals of eight ounces each, *or to start with smaller quantities* and gradually increase them up to the full amount" (the italics are mine). I may here reciprocate Dr. Cautley's compliment to my mathematical ability by admiring the way in which he has added on another meal per day and so accommodated meals to quantity. Unfortunately, however, in adding on another meal, he has forgotten that Salisbury repeatedly emphasised "*five hours must elapse between meals*," so that the hapless patient under Dr. Cautley's *régime* would have to partake of this fourth meal somewhere about midnight.

Turning to my second criticism, Dr. Cautley makes no attempt to justify his fairly weighty error of omission in not referring to the number of meals, nor, as already noted, to the interval which should elapse between meals, although a correct appreciation of both is indispensable to success. Surely Dr. Cautley cannot expect even the ablest practitioner to correctly guess these factors, yet, if he does not, I fail to understand how he can justify his assertion, "It does not need a high order of intelligence to understand the principles of the diet as laid down." I may, however, be doing Dr. Cautley an injustice; perhaps he includes these essentials with "the minutiæ of treatment which are not required."

With regard to exponents, I am glad to say I cannot refer Dr. Cautley to any, if by exponents he means men who exclusively practise the treatment. If, however, he refers to physicians who limit its application to carefully selected cases—the only way in which this or any other system of diet should be used—I can refer him to two whom I know do not use the quantities he mentions. In the meantime, may I support my remarks by referring Dr. Cautley to that admirable and accurate article on the subject in Dr. Burney Yeo's "Food in Health and Disease," from which I quote the following extracts:—

(1) Begin with 1 to 2 ounces at each meal, and increase gradually to 3 to 4 ounces, and then to 5 to 6 ounces, and then to 8 ounces or more if it is well and easily digested.
(2) Five hours between each meal.

I am, Sir, yours faithfully,

Wimpole-street, W., July 10th, 1909. ERNEST YOUNG.

JUNE SUNSHINE IN GUERNSEY.

To the Editor of THE LANCET.

SIR,—The accounts of the weather in England during June have been such dismal reading that it may be interesting to state that during the month 232 hours of sunshine have been recorded in Guernsey. From the beginning of the year until the end of June the total of sunshine was 1032 hours.

I am, Sir, yours faithfully,

HY. DRAPER BISHOP.

Health Office, Guernsey, July 6th, 1909.

MANCHESTER ROYAL INFIRMARY.

(FROM OUR MANCHESTER CORRESPONDENT.)

THE STORY OF THE MANCHESTER ROYAL INFIRMARY.

THE Manchester Royal Infirmary, founded in 1752, has grown from small beginnings to the magnificent hospital which the King and Queen have so recently honoured. The old infirmary, during its sojourn in Piccadilly of over 150 years, underwent many transformations, which may be traced in various old prints, and which always took the form of enlargements of the previous building, until the grave and somewhat sombre edifice still dominating Piccadilly was found to cover as much of the open space as was desirable on hygienic grounds. The pressure on its accommodation for patients has for years been growing more and more severe, and the necessity for enlargement more urgent, so that various schemes, some for rebuilding on the old site, others for moving to a new one, have been considered and rejected in the course of a controversy which has been proceeding for 30 years or more. The subscribers at last instructed the board of management to obtain plans for rebuilding, but when these were submitted they declined to pass them. Lastly, in 1902, a new board was elected with instructions to provide a new hospital on a new site. A member of the old board, Mr. John Thompson, was elected chairman of the new one, and took the chief part in the sale of the old site to the corporation, but his death in 1904 terminated his invaluable services to the infirmary. He was succeeded by the present able chairman, Mr. (now Sir) William Cobbett, who has had the help of Mr. Charles Hopkinson as chairman of the building committee. As was to be expected, various sites were suggested, but that chosen in Oxford-road was presented by the trustees of the late Sir Joseph Whitworth to the University of Manchester for hospital purposes. The University has made additions to this site by purchase, increasing its extent to nearly 13 acres.

The medical and surgical requirements of the new hospital were laid down by the medical board after careful consideration, while the administrative requirements were specified by the late general superintendent, Mr. W. L. Saunder, the whole being further considered in detail by the board and embodied in the instructions to competing architects. Mr. J. J. Burnet, F.R.I.B.A., was architectural assessor, and he recommended the plans of Mr. Edwin T. Hall, V.P., R.I.B.A., and Mr. John Brooke, F.R.I.B.A. They were, with some modification of detail, adopted, and the splendid new infirmary is the result. The accommodation is ample for 592 patients and 339 resident officers, nurses, and servants. The equipment and furnishing have been a heavy task, carried out mainly by Mr. Saunder's successor, Mr. Walter G. Carnt, whose ability and knowledge have been greatly appreciated by the furnishing committee. The cost of the buildings and equipment, purchase of part of the site, redemption of chief rents, and interest on bank overdraft, &c., has been approximately £500,000. In addition, about £25,000 will be required for a central city branch for the immediate treatment of minor ailments and accidents. The annual expenditure of the new infirmary, the central branch, and a yearly contribution to the maintenance of the Barnes Convalescent Home at Cheadle is estimated at £34,500. The £400,000 from the corporation have been supplemented by some smaller sums and by generous contributions from private persons, so that the new infirmary is free from debt at this its most auspicious opening. The infirmary has given of its best, not only to Manchester and Salford, but to a district extending from Barrow in the north to Crewe in the south, so the area to which it may appeal in its turn is a wide one, and it may surely be anticipated that the whole district will help to maintain the new infirmary sufficiently well to enable it to continue its beneficent work.

The new Manchester Royal Infirmary consists of 48 separate blocks of buildings. The principal frontage is to the west, looking across Oxford-road to the Whitworth Park, on the north it fronts to Nelson-street, to the south is York-place, and there is a back entrance from a street on the east of the hospital.

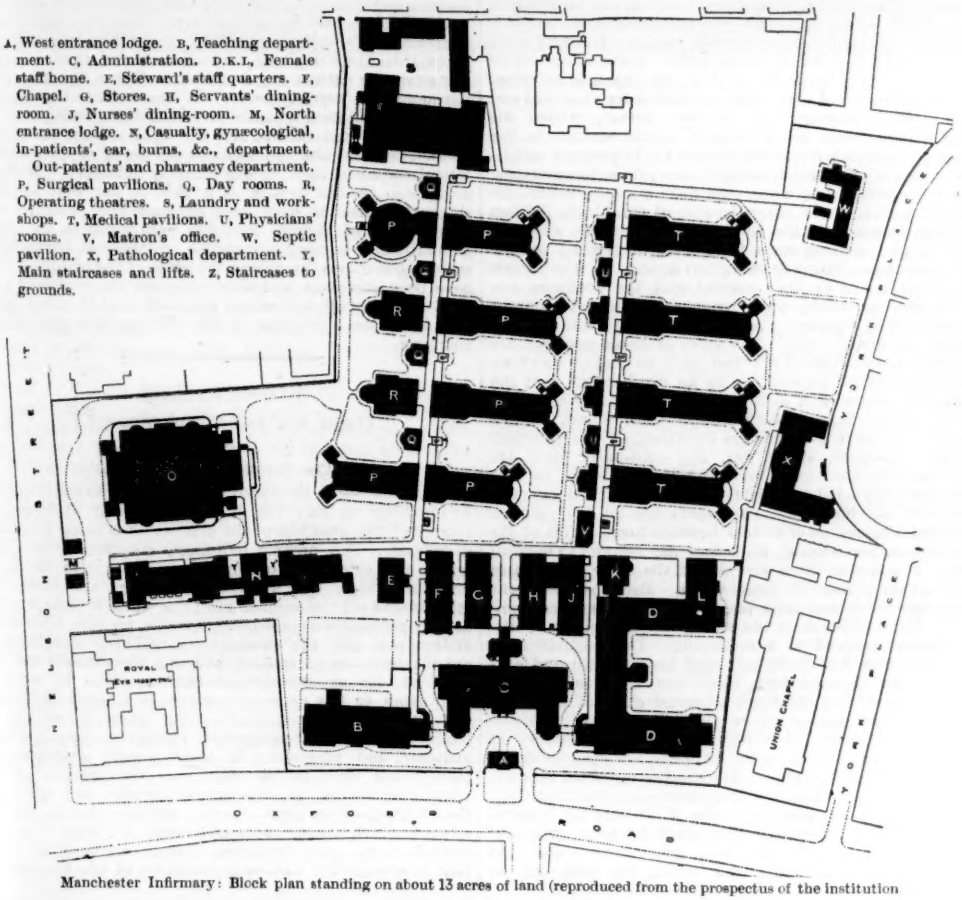
Entering from Oxford-road the visitor finds in front of him a four-storeyed block with wings at each side, the administrative block, containing the offices of the general superintendent's department, a large board room, the resident medical officers' dining-room, the medical board room, and

FIG. 1.

Manchester Infirmary: the Oxford-road façade from the south-west. (Warwick Brokes, Manchester.)

FIG. 2.

A, West entrance lodge. B, Teaching department. C, Administration. D.K.L, Female staff home. E, Steward's staff quarters. F, Chapel. G, Stores. H, Servants' dining-room. J, Nurses' dining-room. M, North entrance lodge. N, Casualty, gynæcological, in-patients', ear, burns, &c., department. Out-patients' and pharmacy department. P, Surgical pavilions. Q, Day rooms. R, Operating theatres. S, Laundry and workshops. T, Medical pavilions. U, Physicians' rooms. V, Matron's office. W, Septic pavilion. X, Pathological department. Y, Main staircases and lifts. Z, Staircases to grounds.



Manchester Infirmary: Block plan standing on about 13 acres of land (reproduced from the prospectus of the institution

the committee room. Residential quarters for the general superintendent, lady superintendent, and medical officers occupy the first and second floors, while those for the domestic servants are on the fourth floor. Three staircases provide for suitable division and for safety in case of fire. The flat roof can be used for a promenade. To the right, or south, is the nurses' home, and in the back sections are bedrooms and sitting-rooms for the ward-maids and laundry-maids. There is ample provision of bathrooms and lavatories. On the left is the teaching block, containing cloak-rooms and common rooms. A large lecture room and museum occupy the main part of the upper floors. The roll of names of the honorary staff from 1752 is recorded in the large entrance hall. Going east from the administrative block by the central corridor the storekeeper's department and the servants' hall and dining-room are on the left and right respectively, with the kitchen department above. The kitchen, 60 feet long by 35 feet wide and 29 feet high, is one of the finest rooms in the hospital, and is lined with glazed bricks. When the hospital is fully occupied meals for nearly 1000 people will be cooked, so that the large kitchen is necessary. There are no fires, for everything will be cooked by gas or steam. There are cold rooms for meat and milk, and all kinds of ingenious arrangements for doing work and saving labour. The food will be taken in special wagons along the covered ways, and up or down lifts as required to the different wards. The patients will all enter the hospital through the Nelson-street entrance. Out-patients will turn to the left, entering through a vestibule (seated for 60) the large waiting-hall, passing the hospital office, which is between the two. This hall is 92 feet long, 41 feet 6 inches wide, and 28 feet 6 inches high, and seats 400. It has a glazed lining and concrete floor and can be readily washed out by a hose-pipe and squeegees. The dispensary is at the end. There is a refreshment counter where a cup of tea, &c., can be obtained at a moderate charge. The consulting-rooms are at each side and there is a small operating theatre. Casualty cases are dealt with in a block to the right. Ambulances can be unloaded under cover on the level of the examination room. In the basement of this block are rooms for electrical and X ray work, massage, and medical baths. Above the casualty department are the gynæcological wards. In the centre of this block is the entrance to the in-patients' admission room, and at the south end of it are wards and an operating theatre for aural cases, while over them is a special ward for burns. A covered way along the side of this block, 756 feet in length, extends to the south boundary of the site, and from it two covered ways turn at right angles; to the east staircases from these give access to the wards above, the north to the surgical and the southern one to the medical wards, while branches to the west connect various blocks together. All the internal traffic of the hospital is under cover. The sides of these passages are enclosed to the height of four feet only, so that though they are protected from the weather by an overhanging roof the air has free access, and satisfies modern requirements as to free air spaces between each part of the hospital. Under the covered ways are subways in which all the principal heating, hot-water, steam, gas, and cold-water pipes are laid, and also electric mains and telephone wires, so that they can be attended to without interfering with the regular traffic of the hospital. The wards are on the pavilion principle, with spaces of 60 feet between them. Five of the ten pavilions are surgical, while four are devoted to medical cases. Five are of three storeys and the other five of two storeys, thus giving 25 large wards. Each pavilion runs north and south, and each large ward receives direct sunlight. The distance from the administrative centres of distribution is reduced to a minimum. The subdivision of internal traffic for goods and staff lessens noise and confusion. The distance from main thoroughfares, together with the intervening buildings, minimise external noise, and in this respect among others there is a great improvement on the state of things in the old infirmary at Piccadilly. Each pavilion has an open-paved basement and is separated from the ground. The wards are grouped in units. Each medical unit has two large wards on the same floor, one of 22 beds for males, and one of 18 beds for females, together with a few small wards, ward kitchens, store and linen rooms, two day-rooms, and physician's room. As pavilions run nearly north and south, the beds are on the east and west sides of the wards, and at the south end there is a balcony where, if the weather allows, the patients can enjoy the sunshine. The sanitary arrangements in the detached towers at the south-east and south-west corners deserve examination by experts. The wards are heated by hot-water radiators, and a supply of fresh air, regulated by a valve, enters at the back, is warmed by the hot surface of the radiator, and passes into the ward. On the sides where the male and female wards face each other a new window glass is used, which is transparent and smooth, and yet is sufficiently obscured. The floors have linoleum laid on the smooth concrete, and there are no square corners for the lodgment of dirt. The "Gilmour" doors, except where there are glass panels, are flat and smooth on both sides, and indeed every care has been taken that the environment of the patients should be absolutely cleanly. The surgical wards are similar to those on the medical side, but each of the five groups contains two male wards of 16 beds each and one female ward of 20 beds, while small one- or two-bed wards bring the total up to 60. A separate block to the north of the covered way contains the operating theatre and its accessories on the same floor. A small gallery for students is cut off from the operating part by a plate-glass screen seven feet high to interrupt dust, but not to prevent a clear view or the sound of the surgeon's voice. The theatre walls are lined with Sicilian marble to a height of seven feet, and above that with "reconstructed marble," and the ceilings are glazed with opalite. The floor is of "terrazzo."

The remaining buildings are the mortuary and pathological laboratory and lecture room; the isolation block for septic cases; the laundry; the lodges, in Oxford-road, Nelson-street, and Berlin-street; the matron's office; a residence for male servants; and a carriage shelter. Another building is the chapel, which will seat about 200. The drainage is divided into many sections, thoroughly ventilated, and the soil drains are flushed by rain-water, which is carried to the different flushing tanks. In this way the cost of flushing with town's water is avoided. The cold-water service is taken from three separate corporation mains, each of which can serve any part of the hospital, so that a breakdown in the supply can scarcely occur. In like manner the electric supply is taken from separate corporation generating stations to the main switch-boards, and the light in each pavilion is divided between the two separate sources of supply, so that a total failure of light is very unlikely to happen. Without going into tedious details, it is safe to say that all contingencies seem to have been foreseen and provided for. The amount of thought that has been given to the plans generally and to every conceivable arrangement for securing sanitary conditions throughout the whole of the buildings must have been enormous, and they represent the combined product of most acute and earnest minds directed to one object—that is, to the alleviation of the suffering and pain of the sick poor.

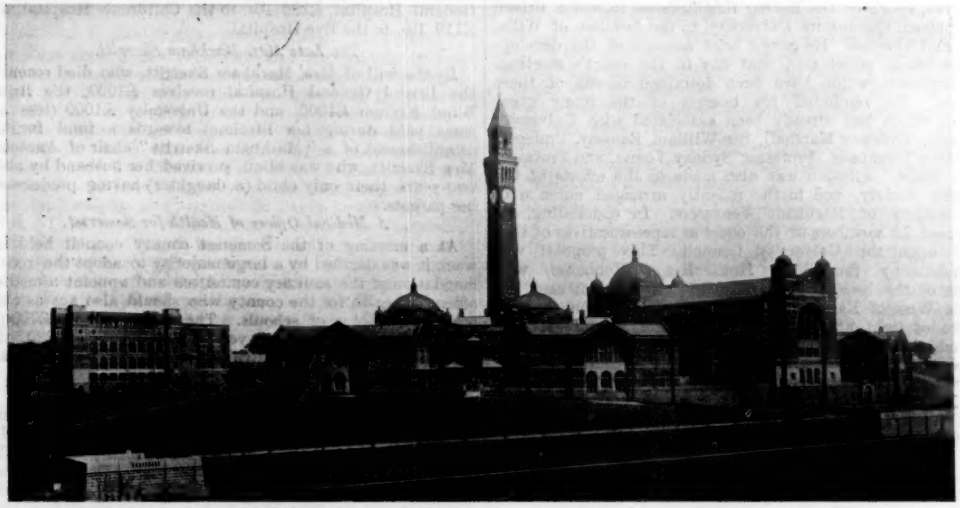
BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The New Buildings of the University.

ONLY those who have seen the buildings, formally opened by the King on July 7th, have any idea of their magnitude or of the grandeur of the plan which is being gradually developed. The present buildings, magnificent in themselves and splendidly equipped, are even now in many respects unique, but when circumstances are favourable other blocks will be erected until the whole is complete and as near perfection as possible. For the present, equipment, endowment, and the extension of teaching and research are the foremost necessities, and the departments not yet provided for at Bournbrook must continue to work in their more or less cramped quarters in the old buildings; but the time must come ere long when it will be no longer possible to accommodate zoology, botany, geology, anatomy, and physiology in their present quarters, and money will have to be found for the erection of the additional blocks at Bournbrook, which will complete the original plan and furnish accommodation for the sciences which are so closely associated with those at present housed in the new buildings. There can be little doubt that eventually the various departments of the Faculties of

Arts and Commerce will also be transferred to Bournbrook. We shall then possess the beginnings of a university of which the Midlands may well be proud. It will possess imposing buildings surrounded by their own gardens and athletic grounds, and will be within easy reach of manufactories, mines, hospitals, and business establishments, where the practical application of scientific training can be demonstrated and studied. The interest already taken in the university by the people of the city and the immediate neighbourhood is indicated by the fact that during the last three days of the past week, when the new buildings were thrown open to the public, 155,000 people availed themselves of the opportunity to inspect the various laboratories and classrooms.



Birmingham University: the Bristol-road façade. The central groups of buildings are the mechanical, civil, and electrical engineering laboratories. The building to the left is the chemistry school, and that to the right, beyond the great hall, is the mining and metallurgy laboratory. (Photograph supplied by Messrs. Whitlock.)

The Graduation Ceremony.

The graduation ceremony which took place in the town-hall on July 3rd was, as usual, an occasion for the display of pretty dresses and hats by the ladies, of wonderful and multi-coloured gowns by the graduates, and for the creation of much noise by the undergraduates. One of the striking features of the ceremony was the number of women graduates, who were especially numerous in the Faculty of Arts.

The Death of Professor Bridge.

Although the friends and colleagues of Professor T. W. Bridge had noticed with deep concern that he appeared to be far from well and was rapidly losing strength, nevertheless the somewhat sudden and fatal termination of his illness came as a surprise and a shock, for up to a comparatively recent date he had been taking an active part not only in the work of his own department but in connexion with the rearrangement of the curriculum necessitated by the removal of the schools of physics and chemistry to Bournbrook. He was a genial, helpful, and kind-hearted colleague who will be much missed by those with whom he has been associated for so many years, and particularly by the members of the Medical Faculty with whom he always had the most cordial relations.

The New Professor of Surgery.

Professor Jordan Lloyd's appointment to one of the chairs of systematic surgery will be very popular, for he is a great favourite with the students, whom he rules and guides with a strong hand, both in the hospital wards and the University classes. Hitherto he has been professor of operative surgery, but when Professor Bennett May resigned his chair of systematic surgery the council of the University requested Professor Lloyd to take the vacant place and he accepted the invitation, his acceptation necessitating the resignation of the position he previously held. His new appointment will give greater scope for his energy and ability, but it will also make much greater demands upon his already very fully occupied time.

Fire at the General Hospital.

Early on Monday morning last an outbreak of fire in the switch-room at the General Hospital was the cause of much inconvenience, but fortunately of only little damage. The first indication of anything wrong was given by a sudden flickering and then by the complete extinction of the electric lights. The men in charge, finding the outbreak in the switch-room, at once closed the lift and so cut off the basement from the hospital wards and corridors. On the arrival of the fire brigade the outbreak was soon extinguished, but the lighting could not be restored, so the buildings remained in darkness during the early hours before daybreak, and as the electric fans were powerless the plenum system of ventilation had to be replaced by regulating the opening of windows.

The St. John Ambulance Brigade.

The members of the St. John Ambulance Brigade were much in evidence on the occasion of the King's visit to the City and University, and they performed a very useful function, which must otherwise have devolved upon the already overburdened police force, for they gave first aid to 563 cases, of whom about a dozen were removed to hospitals. Each member of the corps was equipped with complete first-aid dressings, and each squad of four men was supplied with a surgical haversack, a stretcher, and a squad water-bottle. The men looked smart, and they did their work quickly and well.

The Health of the City.

The cool weather of this remarkably sunless summer is proving beneficial to the public health. Our medical officer's last report shows that during the week ending July 10th the general death-rate fell to 10·6, the lowest rate recorded since August, 1907, and two lower than any rate recorded last year. The zymotic death-rate was 1·1. There were seven deaths from measles, and only one from scarlet fever.

July 13th.

A MEMORIAL TO SIR MORELL MACKENZIE.—The Leyton Urban District Ratepayers Association has arranged to affix a memorial tablet to the birthplace of Sir Morell Mackenzie, 742, High-street, Leytonstone, at the corner of Browning-road. The tablet will be unveiled on Monday, July 19th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE University machine is at work. During the past few days its principal governing bodies have met for the first time and transacted important business. On Wednesday, July 6th, the first court met; about 200 members were present, the Bishop of Hereford, as the oldest Pro-Chancellor, taking the chair in the absence of the Chancellor, Mr. H. O. Wills, through ill-health. Dr. Percival, in his opening remarks, spoke of the lasting indebtedness in which Bristol was placed, through its University, to the families of Wills, Fry, and Thomas. He gave a brief account of the developments which culminated that day in the court's meeting, developments which have been described in one of these letters. He reminded his hearers of the many great names which had already been associated with University College: Professor Marshall, Sir William Ramsay, Professor Sylvanus Thompson, Professor Sydney Young, and Professor Hele Shaw. Allusion was also made to the efforts of the Colston Society, and to the recently arranged union with the Society of Merchant Venturers. In concluding, he proposed 12 members of the court as representatives of that body upon the University Council. This proposal was seconded by the Right Hon. Henry Hobhouse, who spoke of the benefit which not Bristol only, but also the whole West of England, must hope to derive from the new centre of light and leading. The Right Hon. Lewis Fry moved that the seal of the University be affixed to an agreement with the Society of Merchant Venturers relating to the equipment and administration of the Faculty of Engineering. This motion was seconded by Mr. G. W. Davey, Master of the Society of the Merchant Venturers. The next motion was to the effect that all Members of Parliament for divisions of the counties or boroughs within the counties of Gloucester, Somerset, Wilts, Dorset, Devon, and Cornwall shall be members of the court. (The terms of the motion expressly excluded the Members for the four divisions of Bristol, who are *ex-officio* members of the court.) This was moved by Mr. M. W. Colchester-Wemyss, chairman of the Gloucestershire Council Council, and seconded by Mr. F. A. Hyett, chairman of the Gloucestershire education committee. Professor Turner brought a kindly message of greeting from the University of Oxford, and the Bishop of Bristol performed a like office on behalf of the University of Cambridge, and Professor Lloyd Morgan, Vice-Chancellor of the University, acknowledged the helpfulness of their words and of the support which the older universities had always been ready to give. He also remarked upon the existence of a Bristol medical school for many years before the foundation of University College. On Friday, July 9th, the Senate of the University met and elected six of its members as representatives on the Council. Two of these are professors in the Faculty of Medicine, Professor E. Fawcett (anatomy) and Professor J. Michell Clarke (medicine). Immediately after this the first meeting of the Council was held, the Right Hon. Lewis Fry being elected chairman. Professor Lloyd Morgan tendered his resignation of the Vice-Chancellorship, as he found the work belonging to that office so arduous as to hinder the prosecution of psychological research. Sir Isambard Owen, Principal of Armstrong College, Newcastle-on-Tyne, was appointed in his place. Other business transacted by the Council related to the transfer *en bloc* of the teaching staff of the University College to the University; to the formation of the engineering staff; to the purchase of Clifton Hill House as a hall of residence for women students; to the purchase of certain adjoining property; to certain matters relating to the purchase of the Blind Asylum premises; and to questions concerning the arms, seal, and mace of the University. Both in Senate and in Council motions were adopted appreciating Professor Lloyd Morgan's long and arduous labours on behalf of University education in Bristol. It is indeed a matter for deep satisfaction that the new University will still have his advice and guidance without prejudice to the scientific investigations by the fruits of which he will doubtless contribute yet further to its lustre as a seat of learning. The University will be universally felt to be fortunate in securing so distinguished a successor to the important office of vice-chancellor, the academic head. Sir Isambard Owen's experience in the development of universities is very great. He was instrumental in the foundation of the University of Wales, of which he is Deputy Chancellor, and since that time he has been actively concerned in the reconstruction of the University of Durham. His appointment to the Bristol vice-chancellorship is to date from Sept. 9th.

The Hospital Sunday Fund.

The final report of the council shows that the total sum collected for the past year is £1898 17*s.* 4*d.*, an increase of £39 10*s.* 6*d.* upon the previous year. Of this total, £1817 4*s.* 8*d.* have been distributed, the principal grants being £739 10*s.* to the Royal Infirmary, £620 10*s.* to the General Hospital, £239 10*s.* to the Children's Hospital, and £110 10*s.* to the Eye Hospital.

The Late Mrs. Markham Skerritt.

By the will of Mrs. Markham Skerritt, who died recently, the Bristol General Hospital receives £1000, the Bristol Blind Asylum £1000, and the University £1000 (less any sums paid during her lifetime) towards a fund for the establishment of a "Markham Skerritt" chair of Anatomy. Mrs. Skerritt, who was blind, survived her husband by about two years, their only child (a daughter) having predeceased her parents.

A Medical Officer of Health for Somerset.

At a meeting of the Somerset county council held last week it was decided by a large majority to adopt the recommendation of the sanitary committee and appoint a medical officer of health for the county who should also act as chief medical inspector of schools. The salary will be £700 per annum, rising to £800 by yearly instalments of £20, this remuneration to be exclusive of reasonable travelling and office expenses.

The Exeter City Asylum.

The annual report of the visiting committee of the Exete City Asylum, which has just been issued, states that during 1908 448 patients had been under treatment, and that 337 remained in the institution on Dec. 31st. During the year there had been 88 discharged and 33 deaths. The financial statement was satisfactory and showed that there had been a profit during 1908 of £1394, which had been paid to the borough fund of the city.

The Sewage of Bath.

At a meeting of the Bath city council held on July 6th the sewage disposal committee recommended the council to apply to the Local Government Board for sanction to borrow £215,000 for new sewerage, pumping station, and main and disposal works. This will provide for the sewage of a population of 80,000 inhabitants. After some discussion the report was adopted with only three dissentients.

The Western Consumptive Hospital, Torquay.

It has been decided to carry out extensions at the Western Consumptive Hospital, Torquay. The cost of the undertaking will probably be about £2000.

Witchcraft in Somerset.

At a conference of teachers held at Bury, near Dulverton, on June 26th Mr. G. F. Sydenham in an interesting paper stated "that herbalists and white witches were still living among them, to say nothing of 'The Doctor' or seventh son. The belief was widely held that whooping-cough could be cured by placing the sufferer on the ground in a sheep-fold; epilepsy by procuring silver coins from friends and having them made into a necklace or bracelet to be worn by the sufferer; and hæmorrhage and burns by the chanting of a strange prayer. A seventh son, especially if he were the seventh son of a seventh son, was as much sought after in some parishes as if he were a Harley-street specialist. His patients were attended on Sunday mornings after fasting, the cure being by touch and prayer."

July 13th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Death of the Marquess of Ripon.

BY the death of Lord Ripon Yorkshire has lost one of her most eminent sons and the University of Leeds its first Chancellor and its most loyal and consistent supporter. It would be difficult indeed to think of any movement concerned with the University or with the steps that led to its

institution, which was not a matter of deep concern to Lord Ripon, and which his ripe judgment and energy did not help to carry to a practical issue. He was among the number of those who assisted the Yorkshire College at its very commencement, and on the death of Lord Frederick Cavendish he was selected as Principal of the Yorkshire College. A generous donor to the funds of this educational institution, he did more than merely give money. Of his best energies he was lavish, and he must ever stand out conspicuous even among the many who have helped to bring about the realisation of the dreams and hopes of those in Leeds interested in University development.

Health Congress in Leeds.

For some time it has been felt that the holding of two simultaneous annual congresses, one connected with the Royal Sanitary Institute and the other with the Royal Institute of Public Health, was leading to a form of division of labour which was antagonistic to real work. Happily, as the result of mutual discussion, these two associations have accepted the invitation of the City and University of Leeds to hold a joint congress in Leeds in place of the usual two. So far as can be gathered the meeting is likely to be very successful. The Congress is fortunate in having as President, in the person of Colonel T. W. Harding, a former Lord Mayor of Leeds, a sanitary expert, an admirable chairman, and a man of wide culture and public spirit. On Monday, July 19th, the Lord Mayor, Alderman F. J. Kitson, will preside over a conference of municipal representatives and sanitary inspectors within the walls of the University, and a joint meeting will be held of the sections of bacteriology and chemistry and engineering and architecture. During the rest of the week there will be numerous sectional meetings, concerning which some details have already appeared in your columns. The section of preventive medicine will be presided over by Dr. Arthur Newsholme, of the Local Government Board. On Wednesday morning an address will be given in the University by Dr. G. Newman, principal medical officer of the Education Department, and in the evening Sir C. A. Cameron, C.B., will give a lecture with experiments on "Ground Air." On Thursday Dr. B. A. Whitelegge, chief inspector of factories, will give an address on Industrial Hygiene. In the section on preventive medicine discussions will be held on the prevention of tuberculosis, the protection of food-supplies, on hospitals and segregation, on infantile diarrhœa, and on the educational aspects of a municipal milk-supply. The section on child study will be presided over by Sir James Crichton-Browne. Mr. William Hall, who, during the last few years, has supplemented the work of his long experience as a practitioner and inspector of factories by devoting a large amount of his leisure to the work of the feeding of children, will read a paper on the bearing of diet on the physical development of Aryan and Semitic children born and bred in Leeds. Professor A. S. F. Grünbaum, who presides over the section of bacteriology and chemistry, will give an address on his subjects, entitled "Ramparts of Health." A reception will be held in the Art Gallery by the Lord Mayor and on Monday the University holds a conversazione in the building of the medical school. On Saturday a congregation of the University will be held for the purpose of conferring honorary degrees on Colonel Harding, on Sir James Crichton-Browne, and on Major Ronald Ross, C.B.

July 13th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The New Out-patient Department at the Royal Infirmary: Laying the Foundation Stone.

THE Earl of Derby laid the foundation-stone of the new out-patient department of the Royal Infirmary on July 7th, in the presence of a distinguished gathering, when the chair was occupied by Sir William Tate. Prior to the ceremony his lordship was presented by Mr. Ralph Brocklebank, the chairman of the committee, with a silver trowel. At the close of the proceedings visitors were invited to inspect the hospital and to partake of refreshment in the entertainment room. In architecture and material the new building will closely resemble the hospital. On the ground floor ample and suitable accommodation will be provided for medical and surgical patients. The large hall, 75 feet by 35 feet, open to the top, will have seating accommodation for 250 people. On the first floor provision will be made for the special departments—women, eye, throat and ear, and in the basement for venereal, skin, and massage departments. The committee is of opinion that everything desired for the efficient and economical working of the department will be secured. The accommodation set free in the present building will be most advantageously utilised for the reception of casualties and the provision of special beds, which are urgently needed. Although the cost of the bare fabric is assured, £25,000 having been already promised or subscribed, there is still a great deal of money to be raised to complete the work, which is estimated to cost about £30,000. The cost of maintenance is another item which will have to be faced by the committee. The average number of out-patients treated at the Royal Infirmary during 1908 exceeded 80,000, the work being much handicapped owing to the inadequacy of space available in the infirmary. It is estimated that the maintenance of the new out-patient department will require a sum of £1500 a year.

The University of Liverpool: Degree Ceremony at St. George's Hall: Ex-officio Degrees.

Following upon the results of the University of Liverpool examinations recently announced, the ceremony of conferring degrees upon the successful students took place on July 10th, at St. George's Hall, in the presence of an audience which was both numerous and representative. The function was performed by the Earl of Derby, the Chancellor of the University. It is interesting to note that amongst the recipients of *ex-officio* degrees were Mr. William Thelwall Thomas, associate professor of surgery at the University, and Mr. Robert Jones, surgeon to the Royal Southern Hospital, each receiving the degree of Master of Surgery.

July 13th.

NEWCASTLE-UPON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Durham University College of Medicine.

THE question of the constitution of the College of Medicine has been discussed on former occasions in these columns, and it is interesting to note the completion of the adopted scheme for reconstruction in the occurrence of the first meeting of the Court of Governors of the College on July 7th. The management of the College is now to be vested in three bodies—viz., the Court of Governors, the Council, and the Academic Board. The Court of Governors consists of elected, representative, and contributory governors, and at present numbers between 70 and 80. The Council, which has charge of the executive work, is made up of seven members elected by, and out of, the Court of Governors, seven from the Academic Board, and seven more—two representing the Senate of the University, the principal and two members of the council of Armstrong College, and two representatives of the house committee of the Royal Victoria Infirmary. The representative governors are sent from the various municipal, educational, and other authorities in the district. The Academic Board is made up of the professors and lecturers of the College, and its functions are purely educational and disciplinary.

Amongst those present at the court were Professor Sir George Hare Philipson (President of the College), Professor Sir Thomas Oliver, Professor R. P. Ranken Lyle, Professor R. Howden, Professor H. J. Hutchens, Professor Phillips Bedson, Professor H. Stroud, Dr. David Drummond, Dr. A. J. Collis, Dr. C. R. Stewart, Dr. J. T. Merz, Mr. J. Rutherford Morison, Mr. Cecil Cochrane, Mr. A. F. Ericsson, Mr. R. E. Lambton, and Alderman Newton. Sir G. H. Philipson was unanimously elected chairman, and Councillor W. J. Sanderson vice-chairman; Mr. Cecil Cochrane was appointed treasurer of the College, and the following governors were elected to sit on the council:—The Very Rev. the Dean of Durham (warden of the University), Lord Ravensworth, Professor Bedson, Mr. C. A. Cochrane, Alderman J. Cromie, Mr. J. E. Gibson, and Dr. Clement Stephenson.

It may be of interest to give briefly the progress of the College and the reasons for changing its constitution. The medical school was founded in 1832 and was called the Newcastle-on-Tyne School of Medicine and Surgery, and the work

was carried on in two rooms—one for the lectures and a small one for the lecturer's use. The first lecturers were George Fife, John (afterwards Sir John) Fife, Alexander Fraser, Samuel Knott, and H. G. Potter. The number of students on the first register was eight. The number of the teaching staff has now reached four times that of the commencement and the students on the register last winter were 202. During the first 20 years of its existence the school was not in connexion with the University of Durham and students had to take up residence at Durham in the University in order to proceed to a degree in medicine at the University. In 1852 new arrangements were made by which attendance at the school in Newcastle was considered as equivalent to residence at Durham (for the purpose of the medical degree), and so a great difficulty for the student was removed. Up to the present time the business and other affairs of the College have been arranged by a council consisting of the professors and lecturers with three representatives of the Senate of the University, the addition being made a couple of years ago of several prominent public men. In spite of this, however, it was felt that the public and the public bodies should be brought more closely into touch with the College and its administration, and the scheme which has now been adopted was broached. It remains to be seen, of course, what the results may be, but there can be no manner of doubt as to the wisdom of such a step. The mode of representation on the Court of Governors has been carefully dealt with so as to be representative of all the educational and other authorities in the city, more especially of the Armstrong College, where the first year medical student takes out most of his classes, and the Royal Infirmary, where his clinical work is done in the third, fourth, and fifth years. Under the old constitution the College has had a markedly successful life, and it is hoped that the innovation in the management may lead to even better work.

That the school has many advantages can be seen from its geographical situation between Leeds and Edinburgh, the enormous opportunities for clinical work in a general hospital which drains a large area; further, the reports of the inspectors of the General Medical Council state that the examinations of the University of Durham are of a high standard; and finally, the increasing number of the students is an excellent indication. Altogether it is a most desirable thing to incorporate the representatives of the various public bodies and prominent laymen, for after all it is from the layman that real support of every kind must eventually come, and there has latterly been some little tendency for the training for the high profession of medicine to be neglected as opposed to the support given to purely technical instruction, as judged perhaps by the more immediate results derived from the support of the latter.

July 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Finlayson Memorial Lectureship.

Sir Hector C. Cameron, on behalf of the committee of subscribers to the fund in memory of the late Dr. James Finlayson of Glasgow, has presented a deed of gift to the Council of the Faculty of Physicians and Surgeons of Glasgow, conveying to the Council the future management of the fund. The income from the fund is to be held and applied as the endowment of a lectureship to be called "the Finlayson Memorial Lectureship." The selection of lectures is vested in a committee consisting of the president, the visitor, the honorary librarian, and the honorary treasurer of the Faculty for the time being, the present professors of the practice of medicine and of pathology in the University of Glasgow and their successors in their present chairs, and Dr. Andrew Freeland Fergus, who was closely associated with the movement in favour of the fund. The lectures are to deal with some part of pathology or the practice or history of medicine, and will be duly advertised. They will be delivered in Glasgow, possibly every third year, but at least every fifth year, and will be open to all registered medical practitioners and such other persons as the Council of the Faculty may think proper. The first lecture under the management of the original committee was given in February, 1908, by Dr. Norman Moore of London, who lectured on the "Schola Salernitana," its History, and the Date of its Introduction into the British Isles.

Death of Dr. T. Brown Henderson.

The death took place last week of Dr. Thomas Brown Henderson, one of the oldest medical practitioners in Glasgow. Dr. Henderson, who had reached his eighty-first year, was well known among the members of the profession and in connexion with several philanthropic institutions, with the work of which he was for many years closely identified. He was a native of Lanarkshire, and so long ago as 1851 he qualified as a Licentiate of the Faculty of Physicians and Surgeons of Glasgow. Three years later he became a Fellow of the Faculty. His medical studies were continued at the University of Aberdeen, where he graduated M.B. in 1856, and two years later took the degree of Doctor of Medicine. A few months ago Dr. Henderson was laid aside owing to illness, and, though he partially recovered, his health was seriously impaired. Among the institutions and movements of a philanthropic character with which Dr. Henderson was more intimately associated were the Glasgow Dental Hospital, Ear Hospital, and Medical Mission.

Management of Ruchill Fever Hospital.

More than a year ago it will be recollected that owing to reports of overcrowding and also of friction between the members of the staff in Ruchill Fever Hospital a commission was appointed by the Local Government Board to inquire into the state of matters. The commission made several suggestions to the health committee of the corporation with a view of putting things on a more satisfactory basis. Since that time some have thought that friction still continues, and recently a petition signed by 18,000 citizens was presented to the corporation "to appoint an independent inquiry into the administration of the Ruchill Hospital from the date of the Local Government Board inquiry up to the present date, and requesting that the parties carrying out the said inquiry consist of citizens from the following bodies—viz., three from the Faculty of Physicians, three from the Faculty of Procurators, three from the Merchants' House, and three from the Trades Council, with a neutral chairman." A special committee was appointed by the corporation to consider the petition. The committee has now made its report and directs attention to Section 5 of the Public Health (Scotland) Act, 1897, under which the Local Government Board for Scotland is constituted the central authority in respect of all matters affecting public health, including the administration of infectious disease hospitals. The committee therefore has recommended that the petition be transmitted to the Local Government Board.

Death of Dr. Robert Morrison, Methlick.

The announcement of the death of Dr. Robert Morrison of Methlick will be received with very sincere regret by all who knew him. Dr. Morrison, who belonged to the New Deer district, was in early life associated with farm work. He afterwards studied medicine at the University of Aberdeen and graduated M.B., C.M. there in 1887. Subsequently he started practice in Methlick and very soon gathered together a very large practice. Of a retiring disposition, he was yet ready at all times to render assistance ungrudgingly, taking a keen interest in all that pertained to the welfare of the neighbourhood. As a member of the School Board he rendered good service, and he was also a punctual office-bearer in the parish church. His widow and family will have the sympathy of the entire community.

The Medical Inspection of School Children: Scheme for the County of Aberdeen.

A meeting of the Aberdeenshire secondary education commistee was held on July 9th, when a sub-committee submitted a scheme for the medical inspection and supervision of school children under the Act. The scheme suggested a practical amalgamation with the public health department of the county, Dr. Watt being appointed as chief medical officer. The committee, however, did not accept this scheme and resolved to appoint a chief inspector with a salary commencing at £300 and rising by annual increments of £20 to £400. It was also resolved to appoint an assistant at a salary commencing at £200, and rising by annual increments of £25 to £300. This scheme will be submitted to the school boards in the county and to the Scotch Education Department. A conference of the school boards will be called to consider the proposal after it has been circulated.

The Sidlaw Sanatorium: Annual Meeting.

The annual meeting of the directors of the Sidlaw Sanatorium was held on June 29th. The directors in their ninth annual report stated that it was disappointing to the directors to find that the claims of the institution, which the citizens of Dundee at its opening agreed to maintain, were not being met, and that the year's working showed a deficit amounting to £309 7*s*. Dr. A. K. Traill, the medical superintendent, in his report stated that he had endeavoured to trace those patients who had been discharged with the disease arrested since the opening of the sanatorium. The following table showed the after-results in those cases whose history he had been able to obtain:—

	Alive.	Dead.	Working.
Year ending April 30th, 1904	5	5	5
" " " 1905	10	7	10
" " " 1906	25	10	22
" " " 1907	23	5	20
" " " 1908	37	0	32
" " " 1909	37	0	33

The Lord Provost, in moving the adoption of the report, referred to the intentions of the late ex-Provost Moncur in founding the institution. It was perfectly evident, continued the Lord Provost, that the conditions on which Mr. Moncur's gift was accepted had not been carried out by the citizens of Dundee. It seemed to him that the only hope of the good work being continued was coöperation with the public health authority in Dundee. With this object the town council had appointed a committee to consider how the public health authority could work in conjunction with the directors and supply a sufficient number of selected cases paid for from the public rates. The report was unanimously adopted.

July 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Increase of a Dispensary Medical Officer's Salary.

IT is gratifying to be able to call the reader's attention to an act of relative generosity to a dispensary medical officer, coming from a board whose conduct in the treatment of another has been criticised rather severely. At the weekly meeting of the Castlerea board of guardians on July 3rd a motion to increase the salary of Mr. P. C. Walsh was brought up for discussion. Mr. Sweeny, whose notice of motion had been placed before the board a fortnight previously, pointed out that not a single complaint had been lodged with that board during the whole period of Mr. Walsh's 30 years of service. The seconder of the motion pointed out that Mr. Walsh's work was not confined to one district of the union, but was spread over the whole; while some of the worst cases were brought in there for treatment. The general good feeling of the meeting was soon shown in the fact that although, as was to be expected, one member tried to cut down Mr. Sweeny's proposed increase (£30) of salary to £20, the half-way sum of £25 was unanimously voted. Those who know the district know how thoroughly Mr. Walsh deserves his popularity.

Belfast and the New Tuberculosis Act.

At a recent meeting of the Public Health Committee of the Belfast corporation the medical officer of health submitted a report dealing with the new Tuberculosis Ireland (Prevention) Act which came into force on July 1st. He thinks the prescribed circumstances and the prescribed form of tuberculosis to be included in the compulsory notification of this disease, as now defined, are of too limited a nature, surrounded with restrictions, and dependent on the discretion of those in attendance, so that they may lead to disappointment. Many persons hold this view. But I may recall the fact that the cases to be notified are those of tuberculosis of the lung "so circumstanced that they are likely to prove a means of distributing the disease unless precautionary methods are adopted." He thinks, owing to the limited scope of the Act, that if adopted in Belfast there will only be obtained by the Act of Parliament what is already obtained voluntarily through the action of the dispensary medical officers of Belfast in notifying all cases of phthisis admitted to the Belfast union. A further source of information available to the Belfast health authorities was supplied by persons seeking admission to the corporation beds in the Forster Green Consumption Hospital. Now, in reply, it may be said that there are only 14 dispensary medical officers in Belfast, a city with a population of 370,163 inhabitants, and 30 beds alone available for the corporation at the consumption hospital. The medical officer of health thinks the fact that 1213 cases were dealt with during the past year shows that these two sources of information have been productive, but if we turn to his last report—that for 1907—we find that 926 deaths occurred from phthisis and 469 from other forms of tuberculosis—that is, 1395 in all. Now, taking the phthisis cases alone (926 deaths) and multiplying them by ten to arrive at the number of living persons suffering from the disease, which I consider is a very moderate estimate, it would show 9260 patients with active pulmonary tuberculosis, and yet according to this scheme of voluntary notification in Belfast only 1213 were dealt with. The medical officer of health further objects to the expense in working the Act. He says that during the years 1899–1908 the average number of deaths registered as having been caused annually by this disease was 1054, and that the fees alone for the first year, provided all cases were notified, would amount to £1317 10*s*.; further, there will be the expense due to an increased clerical and sanitary staff. The medical profession is to be paid for doing work in regard to an infectious disease—phthisis—as it is with regard to any other notifiable malady, and the stamping out of a disease which alone causes more deaths than all the other infectious zymotics put together is a work of true economy. If the medical officer of health could see his way to advise his committee to adopt the Act, and proceed gradually to put its clauses into work, we might hope to see some improvement in dealing with a disease which has an appalling influence on the death-rate of Belfast.

Whiteabbey Sanatorium.

At a meeting of the Belfast board of guardians held on July 6th the best thanks of the guardians were voted to Mr. Robert Hall "for the manner in which he had conveyed to the guardians such a clear and accurate account of the work done by the medical and nursing staff of the sanatorium during the past half-year."

The late Thomas McIlroy.

Deep regret is expressed in the surrounding district at the death of Dr. Thomas McIlroy, which occurred in sad circumstances at his residence at Newtownards on July 6th. When cycling home on the evening of July 2nd, after visiting a patient in the county, a collision took place with a horse and trap, the result being that Dr. McIlroy was thrown violently to the ground and received a transverse fracture of the skull. He was at once rendered unconscious and remained so until his death. A Ballymena man, Dr. McIlroy studied at Queen's College, Belfast, and graduated M.D. of the Royal University in 1880, having subsequently in 1884 become L.F.P.S. Glasg. and L.M. He began practice in Newtownards about 29 years ago, and while residing there he had by his skill, extreme amiability, and genial disposition built up a large practice which included many of the leading families in the district. He was deeply interested in every movement that had as its object the advancement of the interests of Newtownards. He was medical attendant to the police and to the Post Office officials, and was civil surgeon to the troops of the 4th Battalion of the Royal Irish Rifles. He was buried at Movilla Cemetery on July 8th. Much sympathy is felt for his widow and only child, Mr. Hugh McIlroy (who is a promising medical student), in their great trial and bereavement.

July 31th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

International Congress of School Hygiene.

THE Third International Congress of School Hygiene will meet in Paris during Easter week in 1910—namely, from March 29th to April 2nd. All civilised countries have formed committees and will send representatives. It is evident that the movement for improving the hygienic conditions of

primary and secondary schools (*de l'école et du lycée*) will become important. There will be three discussions and 30 papers read in the sections by French and foreign contributors. Inquirers can obtain full information from the general secretary, M. Dufestel, 10, Boulevard Magenta, Paris.

Traumatic Detachment of the Superior Maxilla.

At a meeting of the Surgical Society held on June 23rd M. Ferraton described two cases of fracture (*fracture par disjonction*) of the superior maxilla in which this bone was completely separated from its osseous attachments. The cases came under his notice last year; in each of them the injury had been caused by the kick of a horse, and the detachment of the superior maxilla was as complete as if a surgical operation had been performed for its removal. This lesion required for its production a very violent blow directed obliquely on the lower portion of one of the maxillary bones near the dental arches. Consolidation of the bones was followed by stricture of the lacrymal canal. The diagnosis was obvious and the displacement was easily reduced under an anæsthetic, but it returned immediately if a fixation apparatus was not applied.

Toxicity of Cancerous Extracts.

At a meeting of the Society of Biology held on June 26th Madame Girard Mangin showed that toxic substances were present in cancerous extracts obtained from tumours which had not undergone suppuration and were treated aseptically; the tumours in question occurred both in the human subject and in the lower animals, and moreover grew both in epithelial structures and in the connective tissue. These toxic substances reduced the blood pressure and the body temperature; they might produce paralysis, and when administered in fatal doses they gave rise to convulsions. They generally caused death by stoppage of the respiration, the heart continuing to beat. Animals which did not yield at once to the action of these cancer toxins became ill and died in a state of profound anæmia without appreciable lesions. The toxic qualities of these extracts were, she thought, more useful than histological examination in elucidating clinical phenomena.

Treatment of Acne Rosacea.

At a meeting of the Société de l'Internat des Hôpitaux de Paris held on June 24th M. Jacquet described the case of a man who had for 20 years suffered from acne rosacea in a form so incredibly severe that the skin of his face became converted into a kind of sponge containing pus. Under appropriate treatment he completely recovered in two months. His habitual dietetic system was anything but conducive to health, for he drank much wine, ate hurriedly, was partial to acid substances, and read during meals. Massage of the face was ordered and in some weeks he was not only freed from the acne but was also no longer troubled as before with dyspepsia, giddiness, and transient disorders of vision.

Some Effects of White Swelling of the Knee.

At a meeting of the Society of Paris Surgeons held on June 18th, M. Barbarin said that the abnormal alignment of the leg in white swelling of the knee was often due to hyperplasia of the femur and the tibia, especially at the level of the epiphysis. This hyperplasia extending to the whole epiphysis caused lengthening of the limb and distortion on flexion. If it was localised in the internal condyle it caused genu valgum. These deformities were usually transient, and the examination of them must include radiographic inspection as well as the noting of clinical details. Conservative treatment gave excellent results if it was gentle, continuous, and not based upon a vain expectation of rapid recovery. In white swelling of the knee the power of movement ought to be regained, he thought, in about 50 per cent. of the cases under well-devised treatment.

Congress of Social Hygiene.

A Congress of Social Hygiene met at Agen on June 25th, M. Jules Siegfried, vice-president of the committee of social hygiene, being in the chair. M. Siegfried spoke of the benefits resulting from what had been done for the promotion of public hygiene and morality; he also referred to the advantages of domestic sanitation as carried out by the English and Americans.

Mercurial Stomatitis caused by Grey Oil.

At a meeting of the Société Médicale des Hôpitaux held on June 18th, when cases of severe stomatitis were being discussed, M. Gauchen spoke of the dangers of grey oil and recommended the use of soluble salts of mercury. M. Balzer said that the danger was due not to the grey oil but to the wrong use which was made of it. Some practitioners injected it in such large doses (*par centimetres cubes*) that accidents were to be expected. Using it with prudence M. Balzer had not seen any ill-effect during the last 25 years. He no longer employed calomel because it caused pain, but grey oil was not open to this objection. M. Mosny said that bottles (*ampoules*) of grey oil, each containing 40 centigrammes of mercury, were on the market—a detestable system, for some practitioners believed it necessary to inject the entire contents of a bottle at once with the result that the patient suffered from mecurial poisoning. M. Queyrat said that he had already pointed out the danger of this mode of treatment; he had, however, used grey oil without accident for many years and was quite satisfied with it.

The Casimiroa Edulis, a New Hypnotic.

At a meeting of the Therapeutical Society M. A. Robin and M. Cayon have communicated the results of their investigations on the Casimiroa edulis or *zapote blanc*. This plant, which belongs to the rutaceæ, was, they said, an excellent hypnotic. When the hydro-alcoholic fluid extract of the seeds was given in doses of one or two teaspoonfuls it produced two or three hours afterwards a natural sleep lasting from five to six hours and not followed by headache or a sensation of fatigue. Being harmless, it might be given to aged persons suffering from renal troubles and it would be very serviceable in nervous diseases. Pathological alterations of the muscular fibre of the heart contra-indicated it.

Treatment of Intermittent Claudication.

At a meeting of the Academy of Sciences M. Moutier pointed out recently that sclerotic lesions of the arteries of the lower limbs might cause two kinds of morbid phenomena. If the ischæmia was incomplete the result would be intermittent claudication, a purely functional disorder long known in the horse but first described in the human subject by Charcot. If the ischæmia was complete the result was gangrene, almost always preceded by intermittent claudication. M. Moutier has seen several patients, some in the stage of claudication and others more advanced, in whom the use of d'Arsonvalisation, either local or general, brought about a considerable and permanent improvement. In particular, one patient who was the subject of arterio-sclerosis recovered from an early stage of gangrene of both feet.

Women and the Bachelor's Degree.

The Superior Council of Public Instruction has recently rejected a motion to exempt women desirous of following medicine or pharmacy from taking their bachelor's degree. Their exemption from military service already places women at an advantage, against which a good many medical students and practitioners are beginning to protest. It has even been suggested that the two years of military service should be replaced by two years of some such employment as sick nursing, which should be compulsory to medical women, either during their student days or after their qualification.

July 14th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Conditions Predisposing to Longevity.

Dr. v. Lindheim, a writer well known for his researches on sociology and on what may be called "folk-medicine," recently communicated to the Gesellschaft der Aerzte the results of his observations on a series of 700 persons of both sexes, who had reached the age of 90 years and upwards. This memoir, which has now been published in a separate form, appears to be the most exhaustive investigation of its kind on the subject. The occupation, the religious persuasion, and the family history of the individual are given in each instance. His observations have led Dr. Lindheim to the conclusion that instances of longevity are most often met with among persons who have been born in wedlock; whose parents and grandparents have been healthy, and especially

if they have been long-lived; who have in infancy been breast-fed either by the mother or by a wet-nurse; who have studied regularity, punctuality, and temperance all through life; and who have postponed their retirement from active occupation as long as possible. Length of life is, as a rule, independent of wealth, for luxury and ease are more fatal than poverty; it is also immaterial whether the persons have resided in a town or in the country, or whether they have passed through illness and sorrows, if their disposition did not lead them to brood over them. The eye was of importance in the causation of longevity because loss of sight tended to shorten life by unfitting a person for work, which was the chief factor in longevity. As regards nutrition, a mixed diet was the best; alcohol and tobacco in small quantities have not been found to be detrimental to the attainment of old age, but rather the contrary. Dr. Lindheim has also shown that amongst those who were recognised as talented individuals and leaders of mankind there was an unexpectedly large number of old persons. Old age must therefore be credited with a fair amount of productive activity; many most important public performances have been accomplished by persons more than 60 years old; poets, artists, generals, men of science, politicians, and inventors have seen three score and ten years before reaching their zenith. The suggestions thrown out by Dr. Lindheim are worth mentioning. As paramount importance attaches to the lineage of an individual, medical practitioners ought to be consulted before marriage; a certificate of health ought to be furnished by each of the contracting parties; matrimonial transmission of syphilis or gonorrhœa ought to be made punishable; healthy persons in the poorer circles should have inducements to marry and rear healthy offspring; and breast-feeding should be encouraged by awards and the protection of mothers. The age for compulsory retirement from active work ought to be made higher than at present, unless in case of illness. Dr. Lindheim says that retirement from active work, whether compulsory or prompted by indolence, means a loss for the State and premature death for the individual.

Cremation in Austria.

The progress of cremation in this country is far from satisfactory from a medical point of view. There is a society here called "Flamme" (Flame) which seeks to promote this idea, but the number of its members is less than 300, and it has not yet been found possible to establish a crematorium in Vienna, although there are two in other parts of Austria. There is, however, a small, though constant, increase in the number of persons who, in their wills, order the cremation of their remains. Last year 115 bodies were sent from Vienna to Graz for this purpose. In spite of medical remonstrances, when the subject was discussed in Parliament, ecclesiastical reasons were brought forward in opposition, and whenever such arguments are adopted, then, in this country, they are victorious. At one of the last medical exhibitions the "Flamme" had a series of exhibits to show the advantages of cremation in comparison with interment, both from the practical and the sentimental point of view. The appearance of a corpse disinterred after the lapse of a period between one and three years, and consequently exhibiting the process of slow decomposition was gruesome enough when compared with the unobjectionable condition of the ashes preserved in urns. A prize has been offered by the "Flamme" for the invention of an apparatus for rapid and economical cremation; a reduction of the rates charged by burial grounds for the urns containing the ashes of the dead has also been applied for but in vain. A "travelling school" has, however, been recently established for the purpose of popularising the facts which are in favour of cremation, and as no obstacle has been placed in its way by the local authorities the result will perhaps be satisfactory. Needless to say the fees at present charged are too high to make cremation possible among the poorer class of the population.

The Indications for Cæsarean Section in Placenta Prævia.

At a recent meeting of the Obstetrical Society of Vienna there was a discussion on the value of Cæsarean section in cases of placenta prævia. Dr. Novak reported from Professor Rosthorn's clinic that in the last seven years there were 237 cases of placenta prævia in which 5·9 per cent. of the mothers and 80 per cent. of the children died. The methods adopted (combined version, without extraction) accounted for the high death-rate of the infants. The results in private practice, however, were excellent, only 2 per cent. of the mothers and 38 per cent. of the children dying in connexion with parturition. The reasons for this were that the surroundings were better and there was an earlier resort to medical help than among those classes who apply to the hospitals. The results of the purely obstetric methods were so favourable in expert hands that they could hardly be improved by Cæsarean section. Professor Schauta in examining the records of 54,000 cases of labour found 438 cases of placenta prævia, with a maternal mortality of 7 per cent. and a fœtal death-rate of 57 per cent. Among all these cases there were only 88 (cases with complete placenta prævia) which would have been deemed suitable for Cæsarean section, while of these only 25 women could be considered uninfected and it would be highly dangerous to undertake the operation in an infected woman. Of these 25 cases four died, all of them from hæmorrhage; they had been brought to the hospital almost exsanguine. The remaining 21 were delivered by ordinary methods and survived the labour. Thus it would appear that Cæsarean section could not have reduced the maternal mortality. Moreover, as the majority of the children were under the normal weight, even the infantile mortality would hardly be diminished by the operation. Professor Schauta would restrict Cæsarean section in placenta prævia to cases where the patient had not had hæmorrhage, had not been examined outside the clinic, and was pregnant with a healthy full-term child. Amongst the immense collection of 54,000 cases he could not find even one complying with these requirements. Similar experiences were reported by Professor Porkacek, Professor von Rosthorn, and others. The agreement between the speakers, who are connected with the largest obstetric clinics in Vienna and perhaps in Europe, is of special interest on account of their great experience and the enormous material for evidence at their disposal.

July 12th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Deaths from Poisoning in Bengal; Analysis of Water and Milk.

THE prevalence of poisoning cases in Bengal is prominently brought to notice in the annual report of the Chemical Examiner to the Government for 1908, which has just been issued. The viscera of no fewer than 770 persons suspected of having been poisoned were chemically analysed during the year, and poison was detected in 317 cases, this proportion being equivalent to 41·17 per cent. and 38·57 per cent., as compared with the year preceding. Opium was, as usual, the poison most generally used, arsenic being next in frequency. Of the 133 samples of drinking-water received from jails, municipalities, and other departments analysed during the year, 3 were classified as "good," 93 as "usable," 18 as "suspicious," and 19 as "impure." As regards milk, 18 samples were analysed, and of these 11 were found to be of good quality and 7 to be diluted with water.

The Viceroy of India.

The Viceroy and Lady Minto completed their Pasteur treatment on May 28th. Their Excellencies have not suffered in general health.

Illness of the Amir.

The Amir of Afghanistan, who has lately been suffering from gout, having derived but little relief from the ministrations of the Kabul hakims, has asked the Government of India for the loan of the services of a competent medical officer. The officer selected is Major H. G. Melville, I.M.S., professor of materia medica in Lahore Medical College. Major Melville will probably be leaving for Kabul shortly. Having spent much of his early medical career on the frontier, this officer has a knowledge of both Pushtu and Persian.

Health of Bombay.

The health of Bombay continues to improve and the week ending May 29th shows another decided drop in mortality from plague. Cholera is, however, still present, the deaths for the week numbering eight, three of which, however, were imported cases. These three bring up the number of cases

imported from up-country during the season to 174, and it is worth noting that although the complaint has been dragging on all through the season only 45 deaths from cholera besides these have occurred in the city. The figures for the week ending May 29th as regards the general health of the city are particularly interesting, because they show that even including plague Bombay city is in a healthier condition now than it was in pre-plague days. The mortality for the week, including plague, gave a death-rate of 33·18 per 1000; the average rate for this time of year for the five years previous to the plague outbreak was 33·28. Deducting deaths from plague, we find that the remaining death-rate at the present time is only 25·3 per 1000 of the population.

Deaths caused by Wild Animals.

The total number of persons killed in the Punjab by wild animals and snakes during the year 1908 was 953, a very slight increase over the number reported in 1907. Out of this number no less than 925 died from the effects of snake-bite; the number of deaths due to leopards, wolves, hyænas, and other animals (including one death from a species of poisonous lizard) amounting to 28, as compared with 19 last year. The Lahore district kept its position at the head of the list in numbers of deaths from snake-bite. Kangra, as in 1907, was the only district in which persons were killed by wild boars. As regards the number of cattle killed by wild animals, the figures for 1907 were abnormally large. In 1908 the number fell to 1643, being 1188 less than in 1907. The total number of wild animals other than snakes killed in the province in 1908 was 1238, an increase of about 50 per cent. over the figures for 1907. The increase is due entirely to the number of wolves killed (882), which was unusually small in the previous year. 4228 snakes were, it appears, killed in 1908. The number of persons reported to have been killed by wild animals in the United Provinces during 1908 was 194, as compared with 159 in the previous year and 280 in 1906. The increase was largely due to the number of persons killed by leopards in Kumaon, which rose from six to 35, and by wolves in Fyzabad division. There is a man-eating leopard in Almora district on whose head a reward of no less than Rs.500 has been placed. In Bahraich district wolves are said to have taken suddenly to killing people, but as they did not form packs it was not possible to organise measures for extirpating them. The local government suggests that this explanation is not correct, and whether correct or not it is unsatisfactory. The reported mortality from snake-bite decreased from 5080 to 4816 persons. The number of cattle killed by wild animals is reported as 11,083, or nearly double what it was two years ago. This is probably due largely to more careful reporting; it is certain that even now a far larger number of cattle are killed than the figures suggest. Leopards are much the most destructive of wild animals, over 8000 of the cattle being killed by these animals. Kumaon suffers worst in this matter, the Deputy Commissioner of Almora attributing the increased destructiveness of leopards to the wholesale slaughter of game by Gurkhas, who have thus diminished the natural food-supply of the leopards. There was an increase in the number of wild animals reported to have been killed and in the rewards paid for their destruction.

Cholera in Hyderabad.

Cholera has broken out in the dominions of H.H. the Nizam. The part worst affected is Nander and Khandar in the Nander district. Fatal cases are reported in Subzawandi and one in Karwan, both places within the Hyderabad municipal area. The officials of the Nizam's government are dealing with the situation, and precautions are being taken to fight the advance of the disease. In Secunderabad Major F. L. Blenkinsop, I.M.S., in medical charge, and Major Leslie, cantonment magistrate, are prosecuting measures to prevent the introduction of the disease in the cantonment limits. An excellent sanitary system exists in Secunderabad, which is divided into circles, each with its own sanitary staff and appurtenances, but what is a perplexing problem is the tendency of the Kompte class to conceal cases. In view of the severe epidemics in previous years and the wide area over which cholera is now reported to be raging outside, it is most expedient to adopt rigorous precautionary measures for the safety of British subjects and the large garrison adjacent to the town.

June 2nd.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology held on July 1st, 2nd, 5th, and 6th, 99 candidates presented themselves, of whom 50 were approved and 49 were rejected. The following are the names of the successful candidates:—

Basil Fraser Beatson, St. Mary's Hospital; Robert Campbell Begg, M.A., B.Sc. New Zealand, New Zealand and Edinburgh Universities: Percy Lytton Tempest Bennett, London Hospital; James Alfred Ayton Boddy, Manchester University; Arthur Vincent Boyall, B.A. Cantab., Charing Cross Hospital; Philip Norman Button, Middlesex Hospital; Frederick William Campbell, University College, Cardiff; Cyril James Weston Clayton, St. Mary's Hospital; Allan Stanley Coalbank, St. Bartholomew's Hospital; Jules Maurice Curé, St. Bartholomew's Hospital; Rustom Kershasp Dadachanji, L.M. & S. Bombay, Bombay University and London Hospital; Andre Constant Labauve d'Arifat, Guy's Hospital; Arthur Lewis Davies, University College Hospital; David Henry Davies, University College, Cardiff; Satis Chunder De, L.M. & S. Calcutta, L.M. Rotunda, Calcutta Medical College and King's College; Edward Percy Drabble, London Hospital; Christopher Robson Dudgeon, Westminster Hospital; Maberly Squire Esler, St. Thomas's Hospital; George Frederick Fawn, University College, Bristol; Eric Alfred Charles Fazan, Middlesex Hospital; Edward Garlick Fisher, B.A. Cantab., Liverpool University; Claude Emery Freeman, Sheffield University; Charles Alexander Robertson Gatley, Guy's Hospital; Jirach Pestonji Ghadiali, L.M. & S. Bombay, Bombay University and King's College; Herbert Marshall Gilbertson, St. Bartholomew's Hospital; William Edward Hallinan, Charing Cross Hospital; Harry James Hoby, James Moncrieff Joly, and George Basil Henley Jones, Guy's Hospital; Cornelius Kennedy, Liverpool University; Victor Alfred Luna, Guy's Hospital; Adolph Richard Niell MacGillycuddy, University College Hospital; Walter Frank Matthews, King's College; Owen David Baker Mawson, London Hospital; Louis Marie Jacques Menagé, Guy's Hospital; Charles Edward Hamilton Milner, King's College; Rustom Dhunjeabhoy Mody, L.M. & S. Bombay, Bombay University and King's College; William Ewart Neale, University College, Bristol; Frederic John Palmer, St. Mary's Hospital; Dyfrig Huws Pennant, University College, Cardiff; Herbert Thomas Retallack-Moloney, London Hospital; Walter Alexander Reynolds, St. Mary's Hospital; Henry Charles Rigg, Charing Cross Hospital; Christopher Hugh Leete Rixon, St. Thomas's Hospital; Henry Ellis Robinson, St. Bartholomew's Hospital; Behram Pestonjee Sabawala, L. M. & S. Bombay, Bombay University; Frederick Tooth, Guy's Hospital; Claude William Treherne, St. Thomas's Hospital; Ivan Lindley Waddell, St. Bartholomew's Hospital; and Edward Algernon Weaver, Birmingham University.

At the quarterly examination in Practical Pharmacy held on July 8th and 9th the following gentlemen were approved:—

William Guy Embleton Allen, St. Bartholomew's Hospital; Edgar Bernard Argles, St. Mary's Hospital; Edward William Atkinson, B.A. Cantab., Cambridge University and London Hospital; Richard Albert Banbury, St. Thomas's Hospital; Maurice Holdsworth Barton, University College Hospital; Herbert Rowse Bastard, Guy's Hospital; William Arthur Hazlerigg Noel Bell, St. Thomas's Hospital; Guy Kenneth Butterworth, St. Mary's Hospital; Rowland Burnell Campion and Kenneth Bleckly Clarke, Guy's Hospital; Richard Christopher Clarke, University College, Bristol; Francis Howard Cleveland, St. Bartholomew's Hospital; Richard William Davies, St. Mary's Hospital; William Alexander Dunn, Otago University and St. Thomas's Hospital; Raymond Gamlin, Cambridge and Liverpool Universities; Frank Garratt, St. George's Hospital; Samuel Sowray Greaves, Leeds University; Stanley Willoughby Green, Cambridge and Leeds Universities; John Greene, Birmingham University; Brabazon James Hallowes and William Henry Harris, St. Bartholomew's Hospital; John Rollo Hayman and William Reginald Huleatt Heddy, Middlesex Hospital; Henry Sydney Colchester Hooper, London Hospital; Job Hughes, Birmingham University; Arthur Ernest Williams Idris, University College Hospital; Gwilym James, B.A. Cantab., Cambridge University and University College Hospital; Ah Chit Jap, Guy's Hospital; Arvor Jones, Liverpool University; Evan Lawrence Jones, Guy's Hospital; Walter Foulkes Jones, B.A. Cantab., Cambridge University and St. George's Hospital; Timothy Joseph Killard-Leavey, Guy's Hospital; Claude Kingston, University College, Bristol; William Stocks Lacey, L.D.S. Eng., Guy's Hospital; Joseph George L'Etang, St. Bartholomew's Hospital; Farquhar McGillivray Loughnane, St. Thomas's Hospital; John Morrison McIntosh, St. Bartholomew's Hospital; Reginald Victor Martin, St. Mary's Hospital; William Gordon Masefield, Middlesex Hospital; Charles Harold Medlock, Guy's Hospital; Frederick Meinertzhagen, St. Bartholomew's Hospital; Henry Leslie Messenger, Guy's Hospital; John Millard, Birmingham University; John Neal, St. Bartholomew's Hospital; John Henry Newmarch, B.A. Cantab., Cambridge University and St. George's Hospital; Henry Maurice Dunlop Nicoll, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Meredydd Parry and George Stanley Phillips, University College, Cardiff; Arthur Thomas Pitts, L.D.S. Eng., Middlesex Hospital; Garnet Wolseley Pool, St. Thomas's Hospital; William Arthur Rail, Melbourne University and St. Bartholomew's Hospital; Herbert Jack Rawson, St. Thomas's Hospital; William Alfred Reynolds, University College, Bristol; Edward Llewellyn Noott Rhodes, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Quintin Hume Richardson, Guy's Hospital; Granville

Douglas Robertson, St. Mary's Hospital; Hassan Ibrahim Shahin, Cairo and Guy's Hospital; Jack Garland Skeet and Eric John Staddon, St. Thomas's Hospital; Horace Steinbach, Guy's Hospital; Cecil Hearle Symons, Charing Cross Hospital; William Edward Tanner, Guy's Hospital; Arnold Rothwell Taylor, Manchester University; Charles Henry Shinglewood Taylor, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Francis Christopher Tibbs, London Hospital; John St. Andrew Titmas, L.D.S. Eng., Middlesex Hospital; Harold Topham, Leeds University; Lawrence Edmund van Geyzel and Charles George Cradock Vawdrey, St. Mary's Hospital; and Frank Hamersley Woods, St. Bartholomew's Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council held on July 8th licences to practise Dentistry were granted to the following gentlemen:—

Benjamin Henry Masselink, D.D.S. Michigan, Michigan University, Charing Cross and Royal Dental Hospitals; Theodore Scott, Middlesex and National Dental Hospitals; and Alexander MacDonald Watson, Guy's Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At the Primary Examination, Part I. and Part II., held recently, the following candidates passed in the subjects indicated:—

Biology.—M. S. Bowen, London Hospital; and J. K. Nariman, Bombay.
Chemistry.—M. S. Bowen, London Hospital; and H. E. Rose, Cambridge.
Materia Medica and Pharmacy.—E. B. Keen, Charing Cross Hospital; R. H. Pettersson, St. George's Hospital; and L. M. Potter, Royal Free Hospital.
Anatomy.—J. P. Jones, Guy's Hospital.
Physiology.—J. M. Coplans, Westminster and King's College Hospitals; and W. R. de C. Shearman, Manchester.

VICTORIA UNIVERSITY OF MANCHESTER.—The following candidates have been approved for the degree of M.D.:—

G. D. Dawson (awarded gold medal), R. L. Ferguson (commended), C. E. Lea (commended), A. E. Rayner (commended), Elsie M. Royle (commended), F. P. H. Birtwhistle, T. M. Bride, H. R. Clarke, H. M. Crake, G. F. Porter, and T. W. Walker.

UNIVERSITY OF GLASGOW.—The following have satisfied the examiners in the Fourth (Final) Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.):—

William Shanks Alexander, M.A., Andrew Clark Anderson, ‖William Anderson, James Currie Auchencloss, David Barbour, Arthur Munby Bayne, George Thomson Bogle, ‡David Young Buchanan, Carl Joseph Barrett Buchheim, **James Cairns, John Allan Munro Cameron, ‡Andrew Hood Clark, Donald James Clark, James Lang Cochrane, Rutherford Cramb, ‖Charles Duguid, M.A., Donald Fisher, Edward John Fitzgerald, §George Fletcher, M.A., †Robert Gale, Florence Ann Gallagher, ¶Edward George Glover, ‖Robert Dunlop Goldie, John Granger, Kenneth Charles Gordon Gray, Albert William Gregorson, Euphemia Adamson Hay, William Alexander Hislop, William Howie, Bentley Moore Hunter, James Towers Kirkland, Alexander Leishman, William Thomson Lindsay, **William M'Adam, M.A., B.Sc., William Charles Macartney, William M'Connell, Donald M'Intyre, Robert Buchanan Forbes M'Kail, Campbell Macmillan, **John William M'Nee, **John Hart M'Nicol, Jeanie Douglas M'Whirter, M.A., David Manson, Mary Cochran Mitchell, Hyacinth Bernard Wenceslaus Morgan, John M'Intosh Morgan, Findlay Murchie, Frederick Lewis Napier, William Niccol, Charles Mill Nicol, David Purdie, Jessie Deans Rankin, John Robertson, ¶Margaret Eason Robertson, Robert Charles Robertson, Hugh George Robinson, ¶Winifred Margaret Ross, William Alexander Sewell, B.Sc., James Stewart Somerville, Richmond Steel, Alexander Stewart, Arthur Ford Stewart, **Robert Wilson Sutherland, *David Campbell Suttie, Robert Sweet, Charles Herrmann Wagner, Ethelwyn Mary Walters, Hugh White, David M'Gruther Wilson, Henry Joseph Windsor, and **David Yellowlees.

* Passed with distinction in (*a*) Surgery and Clinical Surgery, (*b*) Practice of Medicine and Clinical Medicine, (*c*) Midwifery. † (*a*) Surgery and Clinical Surgery, (*b*) Practice of Medicine and Clinical Medicine. ‡ (*a*) Surgery and Clinical Surgery, (*b*) Midwifery. § (*a*) Practice of Medicine and Clinical Medicine, (*b*) Midwifery. ‖ Surgery and Clinical Surgery. ¶ Practice of Medicine and Clinical Medicine. ** Midwifery.

TRINITY COLLEGE, DUBLIN.—At examinations held recently the following candidates were successful in the subjects indicated:—

PRELIMINARY SCIENTIFIC EXAMINATION.

Physics and Chemistry.—Edward S. Johnson, William H. R. M'Carter, Joseph S. English, William D. Pile, Blacker C. Powell, Hedley Boyers, James A. Small, Henry B. S. Dixon, Henry V. Fitzgerald, John G. Butt, Richard A. Stewart, Ernest Bantry-White, Albert W. D. Magee, William J. Merrick, George B. Hadden, Cedric C. Mecredy, William F. Evans, Reginald O. Smyth, Charles P. Kelly, David H. Hadden, Edward G. Fishe, Thomas J. Kelly, Michael Ryan, and Herbert R. Ford.
Botany and Zoology.—Edward P. Vickery, David H. Hadden, Frederick G. Flood, John W. C. Stubbs, Frederick Harris, William J. Merrick, Theodore Allen, John G. Butt, Robert L. Vance, Dorothy E. Webb, Henry G. J. Rutherford, Eleanor Taylor, Trevor A. Lawder, Joseph C. A. M'Calden, Joseph P. Quinn, James A. Small, Arthur N. Brady, John D. Oliver, Wm. F. Gibson, Francis A. Roddy, William E. Tyndall, Rupert C. Lowe, Reginald H. Jones, Archibald R. Toomey, Francis A. L'Estrange, William R. L. Waters, George A. Bridge, William D. Pile, Henry J. Brown, Edmund S. Hatte, Charles O'Reilly, George Buchanan, Henry C. D. Miller, Joseph A. Quin, and Etienne J. Malherbe.

PREVIOUS DENTAL EXAMINATION.

Physics and Chemistry.—George G. Yeates.
Materia Medica.—Kenneth C. M'Naught and Henry Kirk.

INTERMEDIATE MEDICAL EXAMINATION, PART II.

Arthur Chance, Maurice S. Moore, Patrick F. Nunan, William Frier, Hugh E. Williams, Samuel A. Lane, Thomas W. E. Henry, Frederick Burke, and Cecil Rutherford.

FINAL MEDICAL EXAMINATION, PART II.

Midwifery.—Beatrice M. Hamilton, Hilgard Müller, Eric J. Powell, Adams A. M'Connell, Arthur C. Halliowes, Marius A. Diemont, Benjamin A. Molyneux, David Duff, George E. Craig, William H Hart, John W. Flood, and Charles H. Denham.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bordeaux:* Dr. Arnozan has been appointed Professor of Clinical Medicine and Dr. Villar Professor of Clinical Surgery.—*Heidelberg:* The Moos Scholarship, the value of which is about £45, has for the first time been carried off by a lady, Frl. Köbeln, for a paper on Otology.

THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.—The fees for attending the Medical School of this hospital have been revised as follows: Special fee for clinical clerks, three months, £3 3*s.*; student's ticket, three months, £5 5*s.*; and perpetual ticket, £10 10*s.*

THE CHILDREN'S SANATORIUM FOR THE TREATMENT OF PHTHISIS.—The Children's Sanatorium at Holt, Norfolk, for the treatment of phthisis has just received a gift of £300 "In Memoriam M.T." The amount will be placed to the fund for the permanent building which it is proposed to proceed with when the necessary amount is reached. It is understood some £6000 are required.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following prizes were awarded for the summer session:—Barker anatomical prize (£26 5*s.*): H. R. Tighe; special prize (£21), J. S. Pegum. Carmichael scholarship (£15): J. T. Duncan. Gold medal in operative surgery: Miss I. M. Clarke; silver medal, F. N. Harvey. Stoney memorial gold medal in anatomy: J. T. Duncan. Practical histology: S. Griffin, first prize (£2) and medal; I. M. Swanepoel, second prize (£1) and certificate. Practical Chemistry: N. A. Sheridan, first prize (£2) and medal; G. N. Smyth, second prize (£1) and certificate. Public health and forensic medicine: J. T. Duncan, first prize (£2) and medal; K. L. O'Sullivan, second prize (£1) and certificate. Materia medica: J. T. Duncan, first prize (£2) and medal; Vincent J. White, second prize (£1) and certificate. Biology: J. D. Cherry and J. C. Sproule (equal), first prize (£2) and medal each. The lectures and practical courses of the winter session will commence on Oct. 15th.

THE SANITARY REGULATION OF FOOD EXPOSED FOR SALE IN LONDON STREETS.—The London County Council decided, by 20 votes to 10, at the end of a long sitting on July 13th, to give public notice of its intention to consider the advisability of promoting legislation in the next session of Parliament to secure the observance of proper sanitary regulations in regard to articles of food exposed for sale in the streets. As the public health committee points out in bringing forward the proposal, a large amount of foodstuff is sold in London from barrows and stalls, but although the sanitary authorities have power under Section 8 of the London County Council (General Powers) Act, 1908, to inspect premises such as yards, stables, and arches in which is stored food to be sold by costermongers on barrows, the power of inspection ceases when the foodstuff is placed on the barrows and is taken into the streets. It is obvious that at this stage contamination is most likely to occur, and therefore the public health committee proposes that the local authorities shall be empowered to exercise control in the matter. It is further proposed to deal at the same time with the nuisance caused by the accumulation of manure at stables in London. In this connexion the committee refers to the investigations carried on by Dr. W. H. Hamer in 1907 and 1908 showing that horse manure is pre-eminently the breeding-ground for house flies, and that in two cases the influence of stable premises in regard to the prevalence of flies was manifested in a marked degree at a distance of from 100 to 150 yards and was distinctly appreciable as far away as 200 yards. In addition to requiring the more frequent removal of manure, the public

health committee is of opinion that sanitary authorities should be empowered to deal with the structure and paving of stables, as in the case of cowsheds.

UNIVERSITY OF LONDON.—The following awards have been made at University College, London:—Andrews Scholarships:—For students of one year's standing, £30 each: Classics, Louise W. Stone; Modern Languages, Eileen O'Rourke; Mathematics and Science, R. G. Lunnon. Second Year's Scholarship, £20: D. M'Donald. Carey Foster Research Prize: Caroline Schneider. Cluff Memorial Prize (£15): T. C. Graves. Jews' Commemoration Scholarship, £15 per annum for two years: A. E. Evans. Physics Research Studentships: £60, F. Simeon; £40, B. B. Baker. Science Scholarship awarded by H.M. Commissioners for the Exhibition of 1851: H. E. Watson, B.Sc. Tuffnell Scholarship in Chemistry, £80 per annum for two years: H. J. Page. School Hygiene Certificates: C. V. Aserappa, Mary Babbs, Miss S. E. Fisher, Ethel M. Heaton, Isabella Low, J. H. Paddy, Alice Rhoden, Alice R. Ridgeway, Mrs. Katherine E. Ross, J. H. Willis, and Mrs. Alice van I. Winter.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Pfannenstiel, professor of midwifery and gynæcology in the University of Kiel, at the age of 47 years. He was born and educated in Berlin and was afterwards assistant to Professor Fritsch in Breslau, where he afterwards held several important appointments, the University conferring on him the title of professor. Subsequently he went to Giessen as successor to Professor Löblein, and then to Kiel, where he succeeded Professor Werth. He published a number of papers mostly dealing with uterine tumours, and devised a special incision in certain cases of laparotomy. He was joint author of Winckel's "Manual of Midwifery" and of Beit's "Manual of Gynæcology."—Dr. Friedrich Endemann, Privy Medical Councillor of Hesse. He was very active politically and was for many years a member of the German and Prussian Parliaments. His age was 76 years.—Dr. Henry Cazalis, a well-known French poet, who wrote under the pseudonym of Jean Lahor.

THE MEDICO-LEGAL SOCIETY.—The annual dinner of the Medico-Legal Society was held on July 13th at the Holborn Restaurant, London, with the Hon. Mr. Justice Walton in the chair. Among those present were Sir Cozens Hardy, Master of the Rolls, Mr. H. T. Butlin, Sir William J. Collins, Dr. F. J. Smith, Mr. R. Henslowe Wellington, Dr. G. Pernet, Mr. W. Schröder, honorary treasurer, and Mr. Digby Cotes-Preedy and Dr. William A. Brend, honorary secretaries. A telegram of regret at inability to attend was received from Sir R. Douglas Powell. Sir William Collins, in proposing the toast of "The Law and Medicine," said that probably there never was a time in which the general public was more ready to listen, almost obsequiously, to the last word of medico-legal science, if only it would speak with authority and avoid contradictions. Sir William Collins concluded by pleading for simple language in the proceedings of medical and scientific societies; he especially instanced the Pathological Society, and urged that intellectual jargon should be replaced by the Anglo-Saxon tongue; he deprecated the pathological slang so frequently observed in the proceedings of the scientific societies. This toast was acknowledged by Sir Cozens Hardy, the Master of the Rolls, who observed that the word "evidence" applied to what medical men said in the witness-box was not strictly accurate. In nine cases out of ten medical men were bound to give not evidence but expressions of opinion, and therefore conflicting opinions occurred. Knowledge being what it was, it was impossible for any professional man to state more than his opinion of the cause of any particular bodily condition or of what might be the result of such condition. He objected to the long, unintelligible, and unpronounceable words used by some medical and scientific witnesses, which were the puzzle of juries and the distress of judges. Legislation seemed now more and more closely involving medicine in legal problems, and the appointment of medical referees was a useful reform. Mr. H. T. Butlin, President of the Royal College of Surgeons of England, also replied for this toast, while submitting the toast of "The Medico-Legal Society." Mr. Justice Walton, who responded, said that he was satisfied from his experience that great benefit arose from the association of the lawyer with the medical man in discussing subjects of importance to the welfare of the public. Mr. E. Marshall Hall, K.C., in a witty speech, gave the toast of "Our Guests," which was eloquently acknowledged by Dr. Smith, who, continuing his speech, proposed "The Officers of the Society." After this toast had been duly replied to by Mr. Cotes-Preedy, the proceedings terminated.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Progress of Business.

THE progress made with the Finance Bill in Committee has been slow, the work of examining the proposals relating to land being extremely onerous. Late sittings have been frequent and have put a considerable strain not only on Members but on the staff which is kept in constant attendance whilst the House of Commons is sitting. The proceedings on the Finance Bill and the demands made on the time of the House for passing supply have had the effect of preventing progress being made with several measures, such as the Housing and Town Planning Bill and the Milk Bill. Mr. BURNS has been asked when he intends to proceed with the second reading of the latter measure, but he cannot fix a date. Some regret is expressed that more progress was not made with these Bills earlier in the session.

The West African Medical Staff.

The report of the Departmental Committee on the West African Medical Staff is now available as a Parliamentary paper. Mr. H. J. READ of the Colonial Office was chairman, and amongst the members of the Committee were Dr. T. THOMSON (Local Government Board), Mr. W. H. LANGLEY, C.M.G., F.R.C.S.I. (Principal Medical Officer, Gold Coast), and Dr. J. K. Fowler (late Dean of the Faculty of Medicine, University of London, and senior physician, Middlesex Hospital). The report deals at length with the duties, organisation, emoluments, and selection of officers of the West African Medical Staff.

HOUSE OF COMMONS.

WEDNESDAY, JULY 7TH.

The Mater Infirmorum Hospital, Belfast.

Mr. HUGH BARRIE asked the Chief Secretary to the Lord Lieutenant of Ireland whether it was proposed to affiliate the Mater Infirmorum Hospital (Belfast) to the new Belfast University; and, if so, were its teachers and teaching to be recognised; and would the members of its medical staff be admitted upon the examining board of the University.—Mr. BIRRELL replied: It is not proposed to affiliate the Mater Infirmorum Hospital to the Queen's University. It is proposed by the Medical Faculty that the hospital should be recognised as a place for clinical teaching as it was by the old Queen's College, but this is subject to the approval of the Senate. The appointment of examiners is for the Senate, upon the recommendation of the Academic Council. I have no means of knowing how far the medical staff of this or any other hospital will be recognised by the Senate.

Public Health in Ramsey Urban District.

Mr. BOULTON asked the President of the Local Government Board what steps he had taken to compel the urban district council of Ramsey to make proper provision for the safety of the town against scarlet fever and epidemics arising from the bad water and bad drainage to which his attention was called a year ago.—Mr. BURNS wrote in reply: I have pressed the subject of sewage disposal on the district council. It has directed some temporary measures to be taken, but it urges that the expense of providing a new system of sewers, which would also necessitate a water-supply, would be prohibitive. I have not received any such complaint of default on the part of the district council with respect to sewerage and water-supply as would enable me to take compulsory action under the Public Health Act. No outbreak of infectious disease in the district has been reported to me during the present year.

The Irish Cowsheds and Milkshops Order.

Mr. SHEEHAN asked the Chief Secretary to the Lord Lieutenant of Ireland, whether any district councils in Ireland had recently appointed as inspectors under the Cowsheds and Milkshops Order local sub-sanitary officers who also held the position of relieving officers, as well as other positions under the rural district councils; if so, could he give the names of the district councils, or of any one of them, which had made such appointments; and would he state whether the Local Government Board intended to give its sanction to appointments of this nature, in view of the fact that the time of these gentlemen ought to be already fully occupied if they were efficiently to perform the duties appertaining to other offices held by them.—Mr. BIRRELL furnished the following written reply: I understand that in 62 districts the sanitary sub-officers, who frequently hold the position of relieving officers as well, have been appointed to act as inspectors of dairies. I am forwarding a list of these districts to the honourable Member. The Local Government Board considers it unnecessary to press local authorities to appoint separate inspecting officers of dairy premises in localities where the dairying industry does not assume large proportions. A sanitary sub-officer has opportunity of observing defects or insanitary conditions in dairy premises, and there is no reason to suppose that his time is so fully occupied with other official duties as to prevent his carrying out such inspections. Moreover, under the Board's Sanitary Orders of May, 1900, it already forms part of his duties in a district where no inspector of dairies has been appointed to inspect dairies, cowsheds, and milkshops, and to report to the sanitary authority

thereon. The sanction of the Board is only required so far as concerns the remuneration of officers under the Dairies Order.

THURSDAY, JULY 8TH.

Dublin Hospitals and the Royal Irish Constabulary.

Mr. HAZLETON asked the Chief Secretary to the Lord Lieutenant of Ireland on what grounds Steevens's Hospital was selected by the Royal Irish Constabulary for the treatment of constables; whether the hospital enjoyed a monopoly among Dublin hospitals for Royal Irish Constabulary patients; and what sums per week were deducted from the pay of constabulary patients and handed over to the hospital authorities.—Mr. BIRRELL replied: I am informed by the constabulary authorities that Steevens's Hospital is selected for the treatment of constables on the ground of its proximity to the depôt and the desirability of having one hospital where special wards can be set apart and beds kept always available for members of the force. It enjoys a practical monopoly in Dublin for the treatment of constabulary patients. Single men pay 2*s.* 3*d.*, married men 1*s.* 4*d.*, and recruits 1*s.* 10*d.* per day for treatment in the hospital.

Public Experiment on a Bulldog.[1]

Mr. ELLIS GRIFFITH asked the Secretary of State for the Home Department whether his attention had been called to a public experiment performed by Dr. Waller on a bulldog at the conversazione of the Royal Society at Burlington House on May 12th last, whereby a leather strap with sharp nails was secured around the dog's neck, his feet being immersed in glass jars containing salts in solution, and the jars being connected by wires with galvanometers; whether, in view of Section 6 of the Cruelty to Animals Act, 1876, which prohibited any exhibition to the general public of experiments on living animals calculated to give pain, he would say whether a licence had been granted to Dr. Waller for the performance of this experiment; whether Burlington House had been registered by the licensee for this purpose under Section 7 of the Cruelty to Animals Act, 1876; and whether any action had been, or was being, taken in reference to the matter.—Mr. GLADSTONE answered: Yes, sir; and I have made inquiries. Dr. Waller held no licence for this demonstration and Burlington House is not registered under Section 7 of the Cruelty to Animals Act, 1876. I understand that the dog for some time stood in water to which sodium chloride had been added, or, in other words, a little common salt. If my honourable friend has ever paddled in the sea he will understand the sensation. The dog—a finely developed bulldog—was neither tied nor muzzled. He wore a leather collar ornamented with brass studs. Had the experiment been painful the pain no doubt would have been felt by those nearest the dog. There was no sign of this, and I do not propose to take action.

Mr. GRIFFITH: After that exhibition of humour on the part of the right honourable gentleman may I ask what was the source of his information that no pain was inflicted on the dog under the circumstances?

Mr. GLADSTONE: I have seen Dr. Waller and have made the acquaintance of the dog, which is accustomed to this sort of thing and likes standing in the water.

Mr. VINCENT KENNEDY: What was the object of this exhibition?

Mr. GLADSTONE: To show the pulsation of the blood and other interesting matters. It was absolutely painless.

Mr. VINCENT KENNEDY: Did the right honourable gentleman receive the assurance of Dr. Waller that the animal was not drugged while the operation was in progress?

Mr. GLADSTONE: The suggestion is absurd. It was a perfectly ordinary demonstration which might be carried out at any moment and in any place without the slightest pain to the dog and for the edification of those looking on.

Mr. MACNEILL: Will the right honourable gentleman give the House the name of the person who furnished him with his jokes?

Mr. GLADSTONE: Yes, sir, the jokes, poor as they are, are my own.

Insanitary Houses in Donaghadee.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the report of the medical officer of health for Donaghadee, county Down, of the insanitary condition of some of the smaller houses in the town; whether he was aware that some of these houses had earthen floors and windows which did not open; that one of the reasons given at the urban council meeting for not interfering with these houses was that the landlord might evict the tenants where he was not inclined to put the houses in a sanitary condition; and whether the Local Government Board would consider the advisability of interfering in this case in order to compel the enforcement of the Public Health Acts.—Mr. BIRRELL (by written answer) replied: The Local Government Board know that the urban district council recently received reports from the medical officer of health as to the condition of certain houses, but it cannot say whether the contents of these reports are correctly described in the question. The reports have been referred to the public health committee of the council, and the Board, when informed of the action which the council decides to take, will give the matter full consideration.

The Sale of Margarine in Ireland.

Mr. DEVLIN asked the Vice-President of the Department of Agriculture (Ireland) whether he was now in a position to state what means the Department proposed to adopt to protect the public, and especially the working-class public, in Ireland from being sold margarine instead of butter.—Mr. T. W. RUSSELL replied (by written answer): The duty of enforcing the Sale of Food and Drugs Acts primarily devolves on the local authorities. The Department can, in certain circumstances, have samples of articles of food taken for analysis, and can proceed, in default of the local authorities, for offences under the Acts, but it would be obviously impossible for the Department to enforce the Acts generally. All it can do is to stimulate local authorities to greater activity and to supplement their work under the Acts. The Department has three officers employed in the taking of samples. Many successful prosecutions have resulted from their action, and others are pending.

[1] See THE LANCET, May 22nd, 1909, p. 1501.

MONDAY, JULY 12TH.

Public Health in Ramsey.

In reply to Mr. BOULTON, the President of the Local Government Board said that he was aware that the consulting medical officer of health of the county council had reported unfavourably on the water-supply and sewage disposal in the town of Ramsey, but that he had not received any such complaint of default on the part of the district council with respect to these matters as would enable him to take compulsory action under the Public Health Act. He had given directions that one of the medical inspectors of the Local Government Board should visit the district and make a report with respect to it.

Typhoid-Carriers at Millbank.

Sir WILLIAM COLLINS asked the Secretary of State for War how many of the five supposed typhoid-carriers at Millbank, reported on in Paper Cd. 4609, who were undergoing treatment in January–March of this year, were now pronounced to be free from bacillus typhosus; whether these men exhibited any signs of ill-health beyond the excretion of such bacilli; whether the cases treated with general vaccine continued to excrete bacilli many weeks after the vaccination; what results had attended the use of the specific vaccine from which better results were hoped for; and whether cases were recorded in which two years after cured typhoid these bacilli had been found in excretions.—Mr. HALDANE replied: One only of the five men is believed to be cured at present. None of these men exhibited any signs of ill-health beyond the excretion of bacilli. The general vaccine had no effect on the excretion of the bacilli, and the excretion continued until treatment with the specific vaccine was commenced. The specific vaccine has not given any better results than the general vaccine. With regard to the last part of the question, if my honourable friend will refer to the report contained in command paper No. 4609 he will see that such cases have been recorded.

TUESDAY, JULY 13TH.

The Spirit Tax and Drugs.

Sir THOMAS BRAMSDON asked the Chancellor of the Exchequer whether he could state what would approximately be the loss on the spirit tax if a return were allowed of the additional duty on spirits which were largely employed in the preparation of drugs and on brandy prescribed for the use of patients to public hospitals, infirmaries, and dispensaries established and mainly supported by voluntary contributions for the relief of the poor and indigent; and whether he had any reason to suppose that the officers of those institutions could not be relied upon to make an accurate return of the spirits so used.—Mr. HOBHOUSE (on behalf of Mr. LLOYD GEORGE) replied: My right honourable friend has no data which would enable him to give the information required by my honourable friend. Except in the case of drugs prepared on the premises he does not see how officers of the institutions in question would be able to make an accurate return of the amount or strength of the spirits used.

The Indian Medical Service and Professional Fees.

Mr. REES asked the Under Secretary of State for India whether the Government of India (Home Government), Notification No. 607, of July 1st, 1907, regarding the receipt of fees by officers of the Indian Medical Service for professional services rendered to Indian nobles or gentlemen and their families or dependents in British India was still in force, and if so, whether it had received the necessary confirmation of the Secretary of State, in anticipation of which the order was issued nearly two years ago; whether he was aware that the order had caused dissatisfaction in India amongst the officers of the Indian Medical Service; and whether his attention had been called to the spirit of the Regulating Act of 1773 (13 Geo. 3, c. 63, Art. 25), by which the right to take or accept fees, gratuities, and rewards in the way of their profession was specially reserved to medical officers.—The MASTER OF ELIBANK replied: The Secretary of State is still in correspondence with the Government of India regarding the notification referred to in the question, which has not yet received his confirmation. He is not prepared at present to make any statement on the subject.

The Board of Trade and Colour Tests.

Mr. HENNIKER HEATON asked the President of the Board of Trade whether there was any civilised country in the world, besides our own, which regarded the wool test, the official test of the Board of Trade, as a reliable test for colour blindness; whether he was aware that not a single ophthalmic surgeon of eminence in this country was of opinion that the wool test was an efficient one; and whether he could state how many, if any, of the examiners of the Board of Trade, either those employed in the first instance or on appeal, had any knowledge of physiology or ophthalmology.—Mr. CHURCHILL (by written answer) replied: I am obtaining information as to the countries which have adopted the Holmgren wool test as a test for colour blindness in the mercantile marine. This test was adopted by the Board of Trade on the advice of a committee of the Royal Society, which comprised both eminent physiologists and physicists, and I have reason to think that the highest scientific opinion is in favour of its efficiency. One of its advantages is that it can be applied by persons who possess no knowledge of physiology or ophthalmology. No such knowledge is therefore demanded of the Board of Trade examiners in the first instance. But in the supervision of their tests, in the instructions of their examiners, and in conduct of their special examination on appeal, the Board have the advantage of the services of two acknowledged authorities on colour vision, both Fellows of the Royal Society, who hold the degree of Doctor of Science.

WEDNESDAY, JULY 14TH.

Women and the Diplomas of the Royal College of Surgeons.

Mr. V. H. RUTHERFORD asked the Secretary of State for the Home Department whether, in view of the fact that the Royal College of Surgeons was unable, through the provisions of the Medical Act of 1876, to confer the rights and privileges of the College to women who were admitted to its diplomas, he proposed to grant a new charter to the College.—Mr. GLADSTONE replied: I have no power to take any such action. I understand that a supplementary charter for the Royal College could only be granted by the Crown on the petition of the governing body.

BOOKS, ETC., RECEIVED.

BALE (JOHN), SONS AND DANIELSSON, LIMITED, London.

The Dental Directory, 1909. Compiled from Official Sources Price 2s. 6d. net.

Synoptic Chart of Cardiac Examination. Arranged by John D. Comrie, M.A., B.Sc., M.B., F.R.C.P.E. Price 2s. 6d. net.

CHAPMAN AND HALL, LIMITED, London.

A Study of the Principles of Nature. By Frederick Hovenden, F.L.S., F.G.S., F.R.M.S., F.R.Hist.S. Price 6s.

CHURCHILL, J. AND A., London.

An Atlas of Dental Extractions, with Notes on the Causes and Relief of Dental Pain. By C. Edward Wallis, M.R.C.S., L.R.C.P., L.D.S. Price 3s. 6d. net.

A Manual of Minor Surgery and Bandaging (Heath). Fourteenth edition. By Bilton Pollard, F.R.C.S. Price 7s. 6d. net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. A System of Operative Surgery. By Various Authors. Edited by F. F. Burghard, M.S. Lond., F.R.C.S. Eng. In Four Volumes. Vol. IV. Price 36s. net per volume; to subscribers, £6 net per set of four volumes.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

A Theory Regarding the Origin of Cancer. By C. E. Green. Second edition. Price not stated.

HIRSCHWALD, AUGUST, Berlin.

Hämodynamische Studien. Von Dr. med. Johann Plesch. Price M.7.

Erholungs- und Kurorte. Nach ihren Höhenlagen zusammengestellt. Von Lasirifa. Price Pf.60.

KING, P. S., AND SON, London.

By What Authority? The Principles in Common and at Issue in the Reports of the Poor-Law Commission. By John H. Muirhead, LL.D. With an Introduction by Sir Oliver Lodge, LL.D., F.R.S. Price 2s. net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

International Clinics. Edited by W. T. Longcope, M.D., with collaboration. Volume II., Nineteenth Series, 1909. Price not stated.

LONG, JOHN, London.

A White Lie. By G. Russell Beardmore. Price 6s.

MOFFAT, YARD, AND CO., New York.

Tuberculosis: A Preventible and Curable Disease. Modern Methods for the Solution of the Tuberculosis Problem. By S. Adolphus Knopf, M.D. Price $2.00 net.

REBMAN, LIMITED, London.

Accidental Injuries to Workmen with Reference to Workmen's Compensation Act, 1906. By H. Norman Barnett, F.R.C.S. With Article on Injuries to the Organs of Special Sense by Cecil E. Shaw, M.A., M.Ch., M.D., and Legal Introduction by Thomas Campbell, M.A., LL.B. Price not stated.

SPRINGER, JULIUS, Berlin.

Klinik und Atlas der Chronischen Krankheiten des Zentralnervensystems. Von Professor Dr. August Knoblauch. Price M.28.

UNIVERSITY CORRESPONDENCE COLLEGE, Cambridge and London.

University Correspondence College. The Calendar, 1908–1909. Price 1s. net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Atlas der Elektropathologie. Von Dr. S. Jellinek. Price M.35.

WILEY, JOHN, AND SONS, New York. (CHAPMAN AND HALL, LIMITED, London.)

Laboratory Methods of Inorganic Chemistry. By Heinrich Biltz and Wilhelm Biltz. Authorised Translation by William T. Hall and Arthur A. Blanchard. First edition. First thousand. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARTLETT, JACOB HARRY, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Tintern District by the Chepstow (Mon.) Board of Guardians.

CLARKE, N. D., has been appointed Dental House Surgeon at Guy's Hospital.

DOBSON, J. R., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer to the Royal Hamadryad Seamen's Hospital, Cardiff.

EDWARDS, J. C., L.R.C.P. & S. Edin., has been appointed District Medical Officer by the Merthyr Tydvil (Glamorganshire) Board of Guardians.

EMERSON, HERBERT BREE, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer of Pershore (Worcestershire).

GARRETT, R. R., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bishopstoke District of the county of Hants.

LITHGOW, J., M.D., C.M. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cleland District of the county of Lanark.

MULCAHY, P., L.R.C.S. Irel., L.R.C.P. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ballinamore District of the county of Leitrim.

PIM, ARTHUR AUGUSTUS, F.R.C.S. Edin., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Beaminster (Dorset) Board of Guardians.

RYCE, R. S., M.D. Irel., has been appointed District Medical Officer by the Merthyr Tydvil (Glamorganshire) Board of Guardians.

SMYTH, THOMAS EDWARD, M.D., B.Ch. Dub., has been appointed Medical Officer to Kelly College, Tavistock (Devon).

SPAIN, H. G., has been appointed Dental House Surgeon at Guy's Hospital.

STUART, J. H. W., has been appointed Dental House Surgeon at Guy's Hospital.

WARNER, H. F., M.B., B.S. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Fakenham District of the county of Norfolk.

WHITE, J., M.R.C.P. Irel., M.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Tullaroan District of the county of Kilkenny.

WILLIAMS, L. A., M.D. Edin., D.P.H. Liverp., has been appointed Medical Superintendent to the Bradford Educational Authority.

YOUNG, ERNEST, M.D. Durh., has been appointed Clinical Assistant to the Out-patient Department of the Mount Vernon Hospital for Consumption and Diseases of the Chest.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Surgeon for six months. Salary at rate of £20 per annum, with board and residence.

BIRMINGHAM INFIRMARY.—Assistant Resident Medical Officer; also Assistant Resident Surgical Officer. Salary in each case £104 per annum, with apartments, rations, and attendance.

BIRMINGHAM, QUEEN'S HOSPITAL.—House Surgeon for five months. Salary at rate of £50 per annum, with board, lodging, and washing.

BIRMINGHAM, UNIVERSITY OF.—Walter Myers Travelling Studentship. Value £150.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, &c.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried. Salary at rate of £80 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—Honorary Surgeon.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

CAMERON HOSPITAL, WEST HARTLEPOOL.—House Surgeon, unmarried. Salary £100 per annum, with board, rooms, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—Surgeon.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

CARDIFF INFIRMARY.—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.

CHELTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of the Branch Dispensary, unmarried. Salary £80 per annum, with board and lodging. House Physician, unmarried. Salary £70 per annum, with board and lodging.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board, apartments, and laundry.

DERBYSHIRE COUNTY COUNCIL.—Assistant Bacteriologist. Salary £150 per annum.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and lodging.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

GLASGOW DISTRICT MENTAL HOSPITAL, Lenzie.—Junior Assistant Medical Officer. Salary £125 per annum, with board, lodging, &c.

GOVAN PARISH SCHOOL BOARD.—Principal Medical Officer. Salary £500 per annum.

HACKNEY UNION WORKHOUSE, Homerton.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with rations, apartments, washing, and attendance.

HARRIS PARISH.—Medical Officer. Salary £126, with house.
HULL ROYAL INFIRMARY.—Honorary Assistant Ophthalmic Surgeon.
JERUSALEM MISSION HOSPITAL.—Junior Medical Officer.
LEICESTERSHIRE EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.
LIVERPOOL WORKHOUSE HOSPITAL.—Assistant in the Medical Staff. Salary £100 per annum, with rations.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.
MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Junior Resident Medical Officer, also Assistant Resident Medical Officer. Salary in each case £50 per annum, with board and residence.
NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.
NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon (female) for six months. Salary at rate of £100 per annum, with board, apartments, and washing.
PERTH ROYAL INFIRMARY.—House Surgeon. Salary £60 per annum, with board.
PORTSMOUTH WORKHOUSE INFIRMARY AND CHILDREN'S HOME.—Second Assistant Resident Medical Officer. Salary £120 per annum, with apartments, rations, &c.
ROYAL EAR HOSPITAL, Soho.—Non-resident House Surgeon for six months. Salary at rate of £40 per annum. Also Clinical Assistants.
RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident Junior House Surgeon. Salary £60 per annum.
ST. GEORGE'S INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, and washing.
SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician for six months. Salary at rate of £100 per annum, with rooms, board, and washing.
SUNDERLAND AND DURHAM COUNTY EYE INFIRMARY, Sunderland.—House Surgeon, unmarried. Salary £210 per annum.
SUNDERLAND INFIRMARY.—House Surgeon. Salary £80 per annum, with board, residence, and washing.
TYNEMOUTH VICTORIA JUBILEE INFIRMARY, Spring Gardens, North Shields.—House Surgeon. Salary £100 per annum, with rooms, board, &c.
WALLINGFORD, BERKS COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, attendance, &c.
WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.
WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary at rate of £80 per annum, with board, lodging, and laundry.
WORCESTER COUNTY AND CITY ASYLUM, Powick.—Third Assistant Medical Officer. Salary £140 per annum, all found.

Births, Marriages, and Deaths.

BIRTHS.

MATHESON.—On July 6th, at Butler-road, Harrow, to F. M. Matheson, M.R.C.S., L.R.C.P., and Mrs. Matheson, a son.

MARRIAGES.

BAHR—MANSON.—On July 10th, at St. George's Church, Hanover square, Philip H. Bahr, M.A., M.B., to Edith Margaret, eldest daughter of Sir Patrick and Lady Manson, and granddaughter of the late Captain James P. Thurburn, R.N.
BERRY—WEST.—On July 6th, at St. Andrew's Church, Fulham, W., Thomas Percival Berry, M.D. Lond., to Florence Eveline West, eldest daughter of Mr. and Mrs. A. T. West.
BIRKETT—ARBUCKLE.—On July 7th, at St. Margaret's Church, Westminster, by the Rev. J. S. Northcote, M.A., Vicar of St. Andrew's, Ashley-place, assisted by Rev. Cecil Knox, M.A., Henry James Dilkes Birkett, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., of "Ortaquey," Southsea, to Dorothy Esme, youngest daughter of the Hon. Sir William and Lady Arbuckle of Ashley-gardens, S.W.
BLETCHLY—DONALDSON.—On July 7th, at St. Stephen's, South Kensington, George Playne Bletchly, M.B. Lond., to Hylda, fifth daughter of the late William Leverton Donaldson, Barrister-at-Law.
BRISCOE—STAGG.—On July 7th, at St. Andrew's, Weybread, by the Rev. H. H. B. Ayles, D.D., assisted by the Rev. F. Matthews, Vicar, John Charlton of Harley-street, M.D., son of J. J. Briscoe of Bourn Hall, Cambs, D.L., to Grace Maud, M.B., B.S., daughter of the late Rev. S. W. Stagg and Mrs. Stagg of Waveney House, Weybread.
GARDINER—TEGETMEIER.—On July 7th, at St. Thomas's, Regent-street, W., B. Hubert J. Gardiner, M.D., to Ida, daughter of W. B. Tegetmeier, Esq., F.Z.S., &c.
SAFFLEY—ALSTON.—On July 7th, at Sefton Park Presbyterian Church, by Rev. A. Connell, B.D., assisted by Rev. J. McMurchy, B.D., John Saffley, M.B., Ch.B. Edin., 33, Grove Park, Liverpool, to Florence, third daughter of Henry Alston, Auldyn Villa, Glenauldyn, Isle of Man.

DEATHS.

ORME.—On July 11th, at the Red House, Matlock, Albert L'Estrange Orme, L.R.C.P., L.R.C.S.I., aged 45 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE RISK OF INCURRING DIGITAL CHANCRE IN MIDWIFERY PRACTICE.

To the Editor of THE LANCET.

SIR,—It has always surprised me that medical men in general have so little to say about the digital chancre. Every man engaged in practice amongst the poorer classes, and especially near any of our seaports, must have been struck with surprise at the large number of cases of grave venereal disease which he is called upon to treat. These men live their ordinary social life in spite of warnings, which, of course, any medical man who saw them professionally would feel bound to give. The inevitable consequence is that persons engaged in midwifery practice in the district will be confronted with many cases of ulcers of undoubted specific origin. If the medical attendant makes his first vaginal examination of such patients with the bare forefinger he runs a certain risk of infection, which is a vastly increased risk if there be any abrasion on the finger.

No doubt many readers will consider that I am going over very old ground in giving this warning, and my only defence is that I have seen one case of digital chancre in a medical man and have heard well-authenticated reports of two others brought about in this way. When we consider that it is very easy to attend a confinement all through and have no suspicion whatever of the presence of venereal disease, and to have the child brought to us in three months' time suffering from "snuffles" and condylomata ani, it is obvious that this danger of infection really does exist, and that it is one of the many cases where prophylactic treatment is the great factor. Rubber gloves are so very cheap and well made nowadays that I would earnestly urge all medical men to wear them as a routine thing at all confinements. They are better for the patient, as they can be rendered far more sterile than the naked hand, and I have tried to show that they are infinitely better for the medical practitioner also.

I am, Sir, yours faithfully,
ALBERT SHEPPERD, L.S.A. Lond., &c.

Brixton, S.W., July 10th, 1909.

WORKHOUSE AND SPA.

A MEDICAL correspondent sends us a copy of a letter which appeared in a newspaper report of a meeting of a certain Irish board of guardians, at which a letter was read from an inmate of the workhouse under their control. This poor fellow was a chronic invalid who had evolved the following plea for a proper course of spa treatment at the expense of the ratepayers:—

> Dear Board of Guardians,—I hope ye will send me to Bundoran for a few montts to get cured. ..... I am badly with the spine of my back down in my knees, and the stiffness of my joints where the spine of my back ought to be. ..... And ye had great pity for me when ye were up, so I hope ye will send me to Bundoran to the best hotel and get the hot salt baths. I am a young man about 30 years, and will live a long time and by sending me to a good hotel in Bundoran and getting me cured it will be a great saving to the ratepayers, as I never will ask to return to the Workhouse. ..... I am a poor disabled unfortunate creature. I have a pair of trousers but no coat and I would like to be decent going to the hotel where ye will send me to in Bundoran, so I hope ye will treat me decent and give me a good suit of clothes going away with me. Dont mind sending nurses with me to Bundoran. They are too expensive and I dont want such a burden on the Union, although the nurses are wanting me to intercede with ye, and bring them with me to Bundoran, but I will get a man friend of my own to come. Please send me soon. Good-bye and thanks,
> B. K.

The board of guardians were so unsympathetic as to conceive they had finished their duty in the matter by entering this novel request as "Read" without further comment. There is more in B. K.'s suggestion that one big expense is less burden to the rates than indefinite small ones than, perhaps, he wots of; but his solicitude for the public purse when it comes to giving the nurses an outing at the spa scarcely fulfils the generous tradition of Hibernian gallantry.

SOME LESS USED MEDICINAL BARKS.

A COMPARISON of the drugs in use in different countries frequently calls attention to the somewhat restricted distribution of some of them. In the United States, for example, a preparation very generally prescribed for coughs is a compound syrup of white pine, which contains white pine bark combined with various other drugs, including wild cherry bark, blood root, spikenard, balm of Gilead buds, and sassafras, with morphine acetate and chloroform. Many other preparations that are much used in the United States contain vegetable drugs as unfamiliar to British prescribers as are some of those mentioned above, and on this account it is of interest to call attention to a monograph on "American Medicinal Barks," recently written by Miss Alice Henkel.* 35 different barks are described and illustrated, the intention of the compiler being to provide accurate descriptions of these drugs as a guide to growers, collectors, and

druggists. Reference may here be made to the brief notes on the therapeutic action of some of the barks mentioned. White pine bark (Pinus strobus) is used as an expectorant; its taste is mucilaginous, bitter-sweet, and astringent. Butternut bark (Juglans cinerea) has a faint odour and an acrid, bitter taste; it is a mild cathartic and tonic. Prickly ash bark (Xanthoxylum americanum and other species) has a very pungent and somewhat bitter taste. It is employed medicinally on account of its alterative, stimulant, and sialagogue properties and in rheumatism is credited with increasing the volume of the secretions. It is used externally as a counter-irritant. The bark of the root of the cotton plant (Gossypium hirsutum or herbaceum) appears to have emmenagogue properties. In the hands of the physician it may be a valuable remedy, but it is largely employed among the coloured people for illegitimate purposes. The bark is free from odour, but it has a faintly acrid and astringent taste. Dogwood bark (Cornus florida) is used in medicine for its astringent, tonic, stimulant, and febrifuge properties, and in the fresh state it is said to be emetic. The bark of the root was official in the United States Pharmacopœia from 1830 to 1890. During the Revolutionary war it was much employed as a substitute for cinchona bark. It has an astringent, bitter taste, but practically no odour. Fringe-tree bark (Chionanthus virginica) possesses tonic, febrifuge, and laxative properties, and is also said to have a narcotic action. Cramp bark (Viburnum opulus), as the name indicates, is used as an antispasmodic, and it is also said to possess tonic and astringent properties. It is practically odourless and the taste is astringent and bitter. Black haw bark (Viburnum prunifolium) is credited with similar properties, and is a more familiar remedy to us. Both cramp bark and black haw are largely prescribed in the form of a compound elixir in the treatment of dysmenorrhœa and other uterine ailments where a uterine tonic and sedative remedy is required. Of the barks that are employed to a less extent the following are described in the Bulletin: Aspen (Populus tremuloides), a tonic employed in the treatment of intermittent fever; bayberry (Myrica cerifera), tonic and astringent; ironwood (Ostrya virginiana), tonic, alterative, and antiperiodic; white oak (Quercus alba), a powerful astringent, also an antiseptic; magnolia (Magnolia acuminata and other species), tonic and sudorific, used in pyrexial states; tulip poplar (Liriodendron tulipifera), a bitter, stimulant tonic, useful in fevers, rheumatism, and digestive disorders; spicebush (Benzoin benzoin), a vermifuge and also given in fever; wafer ash (Ptelea trifoliata), possessing tonic properties and used in fevers and as an anthelmintic; moosewood (Dirca palustris), a decoction of which is used for its emetic, laxative, sudorific, and expectorant properties; and buttonbush (Cephalanthus occidentalis), a febrifuge, expectorant, and diuretic.

* Bulletin No. 139, Bureau of Plant Industry, U.S. Department of Agriculture, Washington, D.C., 1909, pp. 59.

THE DANGERS OF VERONAL.

ON July 9th, at the Kensington coroner's court, Mr. C. Drew held an inquest upon an artist who had been found drowned in his bath. It was given in evidence that the deceased had been in the habit of taking large doses of veronal to induce sleep and that on two occasions he had been found insensible from the effects of the drug. He had been attended by Dr. G. J. Bagram, who gave medical evidence to the effect that he was satisfied the fatality was due to the same cause, although the post-mortem findings indicated asphyxia from drowning. In his opinion the deceased, whom he did not see after the accident until life had been extinct for some hours, had taken veronal which did not produce an immediate effect, but the hot water of the bath had accelerated the action of the drug, causing sudden drowsiness which led to the death by drowning. The explanation certainly seems a reasonable one, for we can hardly conceive of any person drowning himself either by accident or intention in a bath whilst in a condition of consciousness. An open verdict was returned, and the case serves to direct attention once more to the dangers of a drug habit that has now been responsible for several fatal accidents.

NATIONAL FOOD REFORM ASSOCIATION.

To the Editor of THE LANCET.

SIR,—Will you kindly allow me to inform your readers that the National Food Reform Association has now opened offices at 178, St. Stephen's House, Westminster, S.W., overlooking the Houses of Parliament. May I also mention that we have just published a penny booklet entitled "Economical Dishes for Workers," which will be found useful by district visitors, temperance and other social workers. It contains a number of simple recipes which have been tested and have proved both popular and economical. A specimen copy, with full particulars regarding the association, may be obtained by sending a stamped, addressed envelope to the secretary at the above address.

I am, Sir, yours faithfully,
NEVILLE S. LYTTON, Chairman.

178, St. Stephen's House, Victoria Embankment, Westminster Bridge, London, S.W., July 9th, 1909.

THE COMPOSITION OF ARGEMONE MEXICANA.

SINCE the year 1841 there has been considerable discussion as to whether *Argemone mexicana* contains morphine. This drug has been used to some extent in the treatment of morphinism, and reference was made to its use in THE LANCET of March 2nd, 1907, p. 629. From the experiments of M. W. Dulière, described in the *Bulletin des Sciences Pharmacologique* for May, it now seems clear that the drug does not contain morphine. Samples of the dried and fresh plants were carefully analysed, and it was found that the alkaloids present consisted of protopine and berberine, the reactions for morphine giving negative results. It is satisfactory to know more definitely the composition of this drug as its therapeutic work may now be assessed at its true value. It is of interest to note that a proprietary article named "Antimorphine," which has been vaunted for the treatment of the opium habit, was found by M. Dulière to contain morphine. As this remedy is said to be prepared from *Argemone mexicana* M. Dulière draws the conclusion that the morphine in "Antimorphine" must have been added intentionally.

FRENCH DICTIONARIES.

To the Editor of THE LANCET.

SIR,—In reply to "Guillaume," who asks for a small French dictionary (in French) in THE LANCET of June 26th, the smallest I know is Bescherelle, 13cm. × 9cm. × 2cm., half bound.

I am, Sir, yours faithfully,
Geneva, July 7th, 1909. (DR.) A. CORDES.

To the Editor of THE LANCET.

SIR,—I note an inquiry for a satisfactory French dictionary in THE LANCET of June 26th, on p. 1877, and believe that "Guillaume" will find Bellows's Dictionary for the pocket to be the best, although it contains French and English. I have found all the words explained which "Guillaume" mentioned and might cite one. "Conduire *v.a.* (*Table* 51—for full conjugation of this irregular verb) to conduct [emmener) to take: to lead: to guide [accompagner) to take [diriger) to direct [voiture) to drive [nav.) to steer [merchandises) to carry [affaires) to manage: to carry on [fluides) to convey [fig.) to conduce. Se—,To find one's way: to be conducted: to behave (one's self) to go on." While, on the same page, underneath I find: "Conduct *v.a.*, conduire (to, à] introduire (into, dans] diriger [des opérations, etc.] —one's self, se conduire: se comporter."

I have used this little book for more than 30 years and seldom found it fail. Of course, *Littrè* is indispensable for a full knowledge of details; for example, two columns are required for this one word and the synonyms given are *mener* and *guider*.

One hopes that another Bellows will arise to serve us equally well in German and Italian.

Yours truly,
Perth, July 10th, 1909. A. R. URQUHART.

*** We can endorse our correspondent's opinion of Bellows's Dictionary, which contains an extraordinary amount of information in a small bulk, but we would point out that "Guillaume" inquired for an all French dictionary.—ED. L.

"WHERE IS IT?"

RECENTLY a rare and curious little booklet for the waistcoat pocket, entitled "Where is it? a Handbook to the Urinals, &c., of London," and published at 6*d.* in 1852, changed hands at £4 5*s.* In 1851, the year of the Great Exhibition in Hyde Park, it was found difficult in the absence of public urinals to promote public decency, so this little booklet was issued as "a friend in need," indicating where the nearest urinals were to be found in London. The streets where the urinals were situated are mentioned in alphabetical order. Even so late as the early "eighties" some such guide would often have been of service, for it must be remembered that the princely urinals at the disposal to-day of the Londoner are a feature of modern London.

Red Dwarf is advised to call on the two practitioners, whose seniority and position make them prominent in medical circles, and ask their opinion. His course is dependent upon local views.

P. L. G.—The only general advice we can offer is that such certificates should not be given.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. W. H. George: Anæsthetics.
FRIDAY.—3.45 P.M., Lecture:—Mr. W. Wallis: Mouth and Teeth.

BRITISH MEDICAL TEMPERANCE ASSOCIATION.

TUESDAY.—4.30 P.M., Reception at the London Temperance Hospital.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (24th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index to Vol. I. of 1909, which was completed with the issue of June 26th, and the Title-page to the volume, were given in THE LANCET of July 3rd.

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VOLUMES for the first half of the year 1909 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 15th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 9	30·00	N.W.	...	123	73	52	55	60	Fine
,, 10	29·60	N.W.	0·30	101	63	55	55	58	Cloudy
,, 11	29·96	N.W.	0·04	109	60	55	55	57	Cloudy
,, 12	30·02	N.	0·11	93	63	52	51	53	Overcast
,, 13	30·07	W.	...	106	71	53	55	+0	Fine
,, 14	30·12	W.	0·27	126	74	59	59	63	Cloudy
,, 15	30·11	W.	0·05	120	68	58	59	62	Fine

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